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ART. I.—*Observations on the epidemic Yellow Fever of Natchez, and of the South-west.* By JOHN W. MONETTE, M. D. &c., of Washington, Mississippi.

(*Continued.*)

GENERATION OF YELLOW FEVER MALARIA.

The advocates for the local origin of Yellow Fever in the United States, are not unanimous as to the exact circumstances under which the malaria, or infectious air of Yellow Fever is generated. The only point on which they appear to agree, as a general principle, is, that it is the result of the solar heat upon some putrescent matter. This may be any variety of animal or vegetable matter, in a state of decomposition; or it may proceed from both those classes of matter combined; or it may be the combined gases from each of these separately, which produces the malaria necessary to induce epi-

demic Yellow Fever. Rarely do we find any two of the advocates for the local domestic origin, who agree as to the *particular kind* of animal or vegetable matter, which is most productive of the miasm necessary for producing an epidemic. Some ascribe it chiefly to one kind; others to a different kind. Some require the aid of vegetable decomposition, with *marsh-miasm;* others can, satisfactorily to themselves, show that it is the product of *animal* matter chiefly.

The advocates of this doctrine range themselves under one of each of the following sources of Yellow Fever Miasm:

1. Animal putrefaction.
2. Vegetable putrefaction.
3. Marsh-miasmata.
4. Sensible changes in the atmosphere.

Others ascribe the disease, when epidemic, to some peculiar atmospheric constitution, or some mysterious combination in the elements, entirely beyond our comprehension, the *to thion of Hippocrates.*

We propose to note each of these briefly, and to pass on to what we consider a more rational and consistent explanation of the origin and production of Yellow Fever malaria. We design to show that none of these local causes are adequate to the production and dissemination of this epidemic malaria; and that we must extend our researches beyond such matters if we wish to arrive at truth, and to protect our ports from this pestilential disease.

1. Animal Putrefaction.—Those who look to this source, conceive that this poisonous miasm is thrown off into the atmosphere from either of the following animal matters, viz: From putrid or putrescent fish, putrid bacon or pork, putrid animal carcasses near cities,* from putrid oysters in cellars, or in piles in the open air, from putrid hides in ships and on the wharves, from the opening of old burying grounds, &c.

That none of these are *essential* sources of Yellow Fever miasm, has been established almost beyond controversy.

*Dr. Cartwright, of Natchez: See Medical Recorder, vol. ix, p. 5 to 10 and p. 228.

Dr. Bancroft, in his great work on marsh-miasm and Yellow Fever, has adduced an array of facts and evidence incontrovertible, proving that animal putrefaction may exist to any extent, and under *all circumstances*, without in any wise exciting Yellow Fever; and, consequently, that it is not a *necessary* source of Yellow Fever miasm; and which, of course, must proceed from some *other cause*. He has shown, conclusively, that this species of putrefaction is *not a frequent* concurring circumstance, where Yellow Fever has originated He has also shown that animal putrefaction, to a great extent, has existed in cities and other localities, under the most favorable circumstances, for the production of this miasm, according to the putrefactive theory, and still no Yellow Fever has been produced either sporadically or epidemically. He has further shown that putrid pork, putrid fish, putrid bacon, &c., will not generate any pestilent miasm. Nor will dead bodies of any kind, in a putrescent state, produce Yellow Fever, or any other malignant disease, not even human bodies putrefying by hundreds on the burning sands of Egypt. Neither is it produced from the intolerable stench exhaled from factories of glue and catgut; nor from tanneries, slaughter-houses, tallow-chandleries, &c. Indeed those engaged in these avocations are generally blest with the most perfect health; and their business appears to confer a partial immunity from ordinary disease.

These facts are incontrovertible. They establish the doctrine sanctioned by experience, that the miasm or morbific malaria, or the infection of epidemic Yellow Fever, whatever be its nature and constituents, is not in any sense connected with, or dependent upon the *fœtor* of animal putrefaction in any of its stages of decomposition.

Again it has been placed beyond doubt, by Dr. Bancroft and others, that Yellow Fever infection has been generated, or accumulated abundantly in ships at sea, where no putrid matter, either animal or vegetable have existed as a *possible* source. A case of this kind in point is found in the United States brig "Enterprise," more particularly noted hereafter. On the other hand there are towns and ports, within the

tropics, where putrid vegetable and animal matters abound, in combination, with the offensive effluvia from filthy and muddy bottoms of shallow harbors, and yet the people of these places enjoy almost uninterrupted health. The town of Campeachy is an example hereafter cited.

We shall show also in some of the most destructive epidemics of Natchez and other south-western towns, that animal putrefaction had no agency whatever in its production. In fact, that putrefaction, in any form, is not an essential agent in producing epidemic Yellow Fever.

2. VEGETABLE PUTREFACTION, OR DECOMPOSITION.

Those who ascribe it to vegetable effluvia, trace it to putrid coffee, putrid potatoes,* putrid oranges, rotten corn, putrid sour-krout,† sour porter in warehouses or near the wharves.

That this is not an essential cause of yellow fever miasm, is proven by the same array of facts and arguments presented in the work of Dr. Bancroft, against animal putrefaction.

Vegetable putrefaction, of the most offensive kind and in the most extensive degree, has occurred without producing a single case of yellow fever in those exposed to the effluvia. On the other hand, the most desolating epidemics have prevailed where no mass of vegetable putrefaction could be found.

In every county and settlement throughout Mississippi and Louisiana, how often do we find hundreds of bushels of cotton-seed in a rotting state, exhaling its intolerable stench, while no disease of any kind, much less yellow fever, is produced in those daily exposed to its influenc? These immense accumulations of decaying cotton seed are found on almost every plantation, exhaling a most offensive fœtor, to which every soul on the plantation is more or less exposed during the burning suns of summer as well as after the rains of

* Dr. Rush: See Medical Inquiries.
†Dr. Cartwright: See Medical Record, Vol. 9, p. 226.

spring and autumn. Yet we never have known, or heard of any case of disease, much less yellow fever, traced to such source.

For many weeks before the epidemics of 1837 and 1839, in Natchez, the most zealous advocate of vegetable origin, did not even suspect any matters of that kind; for nothing of the kind existed about the city, as *all admitted.*

On the other hand, after the great tornado of May 7th, 1840, the whole city of Natchez was filled with the ruins of demolished buildings, and every kind of matters covered up in the masses of ruins within the city: the forest growth in and about the city was a scene of destruction; and immediately opposite Natchez, a large grove of cotton-wood and other trees, covering probably near sixty acres, was entirely torn to atoms, covering the whole surface to the depth of many feet, with the mass of timber, trunks, branches and foliage, of a most luxuriant growth. This was in the very midst of the process of vegetable decomposition in July and August following, after the subsidence of the river inundation.

Besides this, at the base of the bluff near the Natchez landing, there was a pond covering about ten acres, with a common depth of 3 or 4 feet water. This pond was filled to the bottom, and for a foot above its surface, with ten thousand fragments of demolished houses, with carcasses of animals, and even men who were supposed to have been buried under them. In this condition it remained, frequented by hundreds of people every day, until October, exposed to all the effluvia which could be exhaled by a powerful sun for nearly four months. With all these extraordinary circumstances, Natchez enjoyed uninterrupted health through the whole season; contrary to the confident prediction of a most desolating yellow fever epidemic, by the advocates for the origin from such causes. New Orleans was free from yellow fever that autumn.

In ordinary seasons, when vegetable decomposition, as a matter of course, would progress more rapidly, with alternate showers and sunshine, we never have any apprehension of

yellow fever in Natchez: but when all moisture is dissipated from the surface of the earth, and when vegetable decomposition necessarily ceases for *want of moisture*, then yellow fever begins to make its appearance, if at all. Yet the yellow fever of Natchez has been ascribed at different times to diverse vegetable matters, because once or twice such matters were found soon after yellow fever made its appearance as an epidemic.

3. MARSH MIASMATA.

Those who ascribe yellow fever to marsh-miasmata, have traced it in imagination, to the exhalations from stagnant water in marshes; to the effluvia from marshy grounds, when all moisture is nearly dissipated, and the dried surface begins to crack open; to the exhalations from mud and filth in the shoal harbors, or on the slimy banks, and battures of great rivers; to common city filth in sewers, back yards and alleys; to loose earth recently thrown up from beneath the surface;* and when these are wanting, to whatever their fancy may suggest. All these we hope to show are *non-essential* in the yellow fever epidemics of Natchez.

Dr. Bancroft, in his great work on yellow fever, has labored hard to prove that *marsh-miasm* is the true and essential cause of yellow fever. On this point his labor has all been in vain. The experience of thirty years since repudiates his doctrine.

We find from medical records too numerous to cite, that this terrible disease in the West Indies, prevails equally in the vicinity of marshes, and on the most baren rocks, where no marsh is near. We find it equally prevailing on high and low situations, upon the Natchez bluff, 300 feet above tide, and on the low alluvions of Charleston and New Orleans, scarcely above high tides; on the sandy beaches of Mobile and Pensacola, and upon the barren rocks of Curacoa in the West Indies,

*Dr. Menvill: North American Journal of Medical Science, vol 1, p. 1 to 20.

and of Lisbon, Cadiz, and Gibralter, in Europe. We find it likewise prevalent on the deltas of the Mississippi, Oronoco, and the Amazon.

On the other hand, we find in many of the low marshy regions of Louisiana, in Attakapas, Terre Bonne, La Fourche Interior, and about St. Augustine, in Florida, the most healthy population of all the South, where longevity is proverbial,* and Yellow Fever is unknown.

In the West Indies it is endemic all the year in the *commercial ports* on the coasts, while it is unknown in the *interior* towns of the islands. It is equally unknown in the Southern towns of the United States, where there is no direct trade with West India, or infested ports.

The most extensive marshes in the Southern portion of the United States, are as free from Yellow Fever as are the pine hills of Mississippi and Alabama. This is confirmed by all experience in the extensive plantations which everywhere spread over the Mississippi bottoms.

4. SENSIBLE CHANGES IN THE ATMOSPHERE.

Those who ascribe epidemic Yellow Fever to this cause, have conceived that the disease was produced by a dry and heated state of the atmosphere; or by moisture in the air at a high temperature. Professor Caldwell contends that the predisposition to Yellow Fever is induced by a continued mean temperature of 80° Fahrenheit, for forty days successively.† Others believe that sudden vicissitudes, from hot to cold, and the reverse, produce the epidemic constitution of the air. Others ascribe it to the electric condition of the air as indicated by the amount of thunder and lightning which is observed during such periods.

That this disease does not originate essentially from a *humid* or *arid* state of the atmosphere is clearly shown by the

*See Dr. Cartwright on Jussiuea Grandif., West. Jour. of Med. and Surgery.

†See Med. and Phys. Memoirs, Lexington, 1826, p. p. 141, 142, &c.

whole history of Yellow Fever epidemics. This disease has been epidemic in cities of the United States and Europe as well as in the West Indies. It has made its first appearance in Philadelphia, in the hottest and driest weather, and it has begun to spread in New Orleans, *after* a dry summer, while the earth was washed with showers almost every day. It has likewise made its first appearance in Natchez in the most hot and sultry condition of the air, after the greatest drought throughout the whole State, and it has spread and continued to prevail through all the vicissitudes of weather above a temperature of 40° of Fahrenheit's thermometer. It has also begun to spread in Natchez and in New Orleans under all these vicissitudes of weather. It has prevailed in these two cities after every variety of weather during the spring months; after a wet and dry spring; after a late cold spring, and after an early and warm spring.

It prevails at times in *commercial* ports where the air is either habitually dry or humid; no less on the dry and parched shores of Curacoa, than on the flat alluvial marshes of New Orleans. But in all places where it has ever prevailed as an epidemic, it has been after a long dry oppressive summer; and this is especially true in relation to its epidemic visitations in the United States.

Dr. Peixotto informs us that the Yellow Fever is endemic in the island of Curacoa during the year, at all times and seasons; but that it prevails more especially in the "*calm and sultry months;*" that "*new comers* from Northern latitudes are its *appropriate subjects;* the *natives* and *seasoned inhabitants being exempt from its attacks.*"* He moreover informs us that "it never assumes an epidemic character unless after the arrival of large numbers of *northern strangers* during the *sultry* months of the year."

On this island, situated under a vertical sun, the climate is hot, but the air of the island is proverbial for its *dry elastic* qualities. He informs us, "the air is *pure* and *dry*, and sel-

*See New York Med. and Phys. Jour., vol. 1, p. p. 411, 412, &c.

dom, or never, darkened with mists and fogs, so frequent at the north;" that "during the droughts which are common, the leafless desolation of winter reigns under a tropical sun; ordinary wells are exhausted; animate and inanimate nature suffers under the burden, and seems nearly ready to waste away and perish."* On this island there is no marsh and scarcely a living stream of fresh water.

This is one of the islands where Yellow Fever is *indigenous;* it is also *indigenous* to *certain ports* in numerous other islands in the Caribean sea, and in the Bahama and other groups, together constituting the West Indies, and the Great Antilles. Here is the proper orgin of the American Yellow Fever.

The views of Professor Caldwell, before alluded to, as to an unremitted mean temperature at or near 80° of Fahrenheit, approach nearer the true cause, than any thing we have seen. This degree of mean temperature, provided the atmosphere be calm and sultry, is requisite, to a certain extent, to prepare the atmosphere of a port or city for the prolific spread of *yellow fever infection,* when once introducd. But in the United States, this degree of mean temperature has been witnessed, where no yellow fever has been produced or existed in any condition; whereas we know that yellow fever has prevailed as an epidemic, *un*preceded by a mean temperature of 80° for 40 days. Our own city of Natchez will furnish the facts without going further.

According to the meteorological table given by Dr. Parlee in his account of the yellow fever of 1817 and 1819, we find as follows,† viz.: That the *mean* temperature of July and August for sixty-two days, in the years 1814, 1816, and 1818, was steadily from 80° to 83°, and yet no yellow fever occurred in Natchez in either of those years. In the year 1817, the mean temperature during July, for 31 days, was 80°—and during August, for 31 days, it was 77°—during the month of September, for 30 days, the mean temperature was

*See New York Med. and Phys. Jour., vol. 1, p. p. 398, 400.
†See Chapman's Med. and Phys. Jour., vol. 3, p. 17, &c.

only 73°—and yet the yellow fever prevailed with great mortality, having become epidemic not until the 28th of September. Again, in the following year of 1818, the mean temperature during the months of July and August, was for each, 82°—being 60 days steadily at 82°—and yet no yellow fever appeared in Natchez that year. Again in the following year of 1819, the mean temperature of July and August was for each, 79°—being for 62 days. For September following, the mean temperature was only 75°—and yet the yellow fever prevailed with great mortality; having become epidemic about the middle of September.

We might cite authority to any extent to show that the same state of atmosphere has existed under similar circumstances elsewhere. But we will make only one more reference to the tables of Dr. Tooley of Natchez, and he is proverbial for his accurate observations. In the year 1824, the mean temperature for July was 86° for 31 days; and for August 82½° for 31 days; thus giving an average mean heat of 84°—yet no yellow fever was known in the city. In the year 1825 the mean temperature for the month of July was 81° for 31 days; and for August 83½° for 31 days. Thus the general mean temperature was up to 82° for 62 days. This year the yellow fever prevailed with great violence as early as the 20th of August, or after 52 days of that mean temperature.

Thus it would appear, that although a continued high temperature is a necessary circumstance in causing an epidemic yellow fever, that *something else* super-added is requisite. In the year 1824, there was a less number of rainy days in August than in August of 1825*—so that a deficiency of rain is not the cause exclusively.

If it were owing to a deficiency of moisture in the air, this could easily be obviated by watering the streets, repeatedly, as often as evaporation was complete. *Heat* is necessary to the generation and dissemination of yellow fever infectious

*In 1824 there was rain 12 days in July; 9 in August. and 5 in Sept.
" 1825 " " " 12 " in July; 11 in August, and 5 in Sept.

air; but heat, if attended with much wind and agitation of the atmosphere, will not generate and diffuse this infectious air through a city.

At certain times there certainly is more or less of a general "epidemic constitution of the atmosphere" over an extensive scope of country. This peculiar condition does, doubtless, predispose the population in crowded cities and ports to certain grades of fever, and to yellow fever especially. But as to yellow-fever "epidemic constitution," we believe there is nothing very peculiar; nothing that can properly be called the *to thion* of Hippocrates, or the "*seminarium e cælo dimissum*" of Diemerbroeck. We believe that it is simply a condition of the air, which we can reasonably conceive of; and concerning which we may safely predicate a course of conduct, which will prevent, or protect a city from, an epidemic yellow fever.

This is simply a hot, sultry condition of the general atmosphere, whereby the circumscribed air of a town or city becomes charged with human and other effluvia, which become more cencentrated by the absence of proper ventilation and change of air, until it becomes a fit *nidus*, or receptacle, for the reception and dissemination of what is properly *Yellow Fever infection.*

YELLOW FEVER IS A COMMERCIAL DISEASE.

This is a point already established, and it is necessary here only to illustrate that point from authority and by exemplification.

Yellow Fever, as an epidemic, is a disease peculiarly confined to seaport towns and cities in the United States; or to those places contiguous to which it has been transported in one form or another. It is found prevalent chiefly in seaport towns and cities in the Southern portion of the United States. In those maritime towns, which carry on *no trade* with the West Indies, or with infected cities near the Atlantic seaboard, we find the people are exempt from this malignant dis-

ease. The interior towns which, by their location and natural circumstances, are debarred from direct water communication with the large commercial ports, and, from the West India trade, are uniformly exempt from all appearance of this disease.

So true is this position, in the United States, that we scarcely deem it necessary to confirm it by the citation of authority. The whole history and records of the medical profession, relative to the appearance of this disease as an epidemic, show conclusively that its ravages have been primarialy in commercial ports, where there are frequent arrivals of vessels from West India ports and seas. Where it has appeared in towns which were not ports it can be shown that the disease was transported thither by persons already infected or by other means.

As Dr. Ramsay,* of Charleston, remarks, "Yellow Fever is eminently the disease of cities." It proceeds from an atmospheric contamination, which is perfectly *harmless* to natives of the West Indies, and to those who have become seasoned or acclimated to it; but is poison and death to strangers with northern habits and constitutions.

Dr. Rush, with all his zeal to establish the local origin of Yellow Fever miasm, from putrescent vegetable matters, and from city filth, could not resist the evidence, forced upon him, that ships sometimes contained in their holds, a poisonous air which could and often did produce yellow fever about the wharves. Pressed on every side by such indubitable evidence, it is surprising to what additional sources of local effluvia he resorted, rather than abandon his favorite theory of local origin. After the epidemic of 1793, which he ascribed to putrid coffee, every visitation presented new apparent sources of miasm, as if to show the fallacy of his theory. Such were the diversity of circumstances, under which subsequent epidemics appeared, that he was compelled, in order to sustain himself, to *make numerous additions* to the former list of causes. To adapt his theory to the changing *phases* of circum-

*See Med. Repos., vol. 4, p. 100.

stances, he is compelled to admit the *combined influence* of docks, sewers, filthy gutters, filthy yards and cellars; also every variety of animal and vegetable putrefaction, and, lastly, partially to admit, to a certain extent, the *real source*, which he denominated "*the foul air of ships*," diffusing itself into an atmosphere vitiated with exhalations extricated by "*great solar heat.*" Not only this, but he was obliged to deny the peculiar character of the disease, and gave it the name of "Bilious Yellow Fever."* With such arguments did he lead the judgments and prejudices of the people of Philadelphia, and of many theoretical physicans.†

Numerous instances were presented in the little trading towns and ports on the Delaware river and at different points on the Chesapeake where yellow fever had been introduced, without the sources to which Dr. Rush ascribed it in Philadelphia, and in which he was obliged to admit that "*the foul air from the ships acted as an* EXCITING CAUSE." This ground was taken by those of the same school; and they admitted and contended that this "*exciting cause*" was frequently introduced in the vessels: and recommended such vessels to be quarantined, &c. Yet they still adhered to their former belief that this was not *contagion*, which appears only a specious term to cover their defeat. Dr. Rush finally was compelled to admit that a virulent infection could be, and had been, introduced by ships in the form of "*fomites*" in clothes, bedding, and in trunks, boxes, &c.

The same doctrine was advocated by "The Academy of Medicine, in Philadelphia." In a letter to Gov. Mifflin, of Pennsylvania, Dr. Philip Syng Physick, the President of the Academy, by order, unequivocally admits, and contends, that the yellow fever of 1798, in Philadelphia, was in part to be ascribed to "*the foul air discharged* from the ships Deborah and Mary," from St. Domingo—which island they left respectively on the 18th and 29th of July. Again he declares: "We

*See his "Observations on Yellow Fever," addressed to the citizens of Philadelphia, in 1799, A. D. Also Med. Repos., vol. 3, p. 294-5.

†Also, Med. Repos., vol. 6, p. p. 156–7 and 162.

are the more determined in our opinion of the foul air of the Deborah and Mary, being the cause of many cases of our fever, from *similar cases of fever having been often produced* from similar causes; *instances of which* we mentioned in our letter to you last year."* Again he says: "To guard against *the frequent source of yellow fever*, from the *noxious air in the holds of the vessels*, we recommend the unlading of such vessels, as contain cargoes liable to putrefaction, and the discharging of the *ballast of all vessels* at a distance from the city, during the months of June, July, August, September, and October."†

In this and numerous other instances which might be cited the fact that vessels do, and have repeatedly brought yellow fever into ports and trading towns along the seaboard, is clearly admitted by Dr. Rush and other distinguished advocates of *local origin;* the fact of *importation* is established by their own testimony. Yet they rest their whole argument in the controversy upon the unimportant question: whether this pestilential air is solely the result of *human contagion*, or *personal infection*, in contradistinction, to an infectious air produced by certain natural causes?

To be clearly understood as we progress in our remarks, we conceive the following to be a good definition of *contagion* and *infection*, viz:

Contagion is a poisonous material, capable of exciting a peculiar disease in healthy bodies exposed to its influence; and emanating with *that capacity* or power, at all times and under all ordinary circumstances, from a body labouring under that peculiar disease.

Infection is some noxious gaseous matter, capable of exciting certain kinds of fever, *and not emanating in that form;* having the power of exciting the disease, from some properties assumed after it had emanated from a diseased body. Such is the infection of yellow fever.

Whether yellow fever can be introduced and disseminated

*See Medical Repository, vol. 2, A. D. 1800, p. 327 to 331.
†Ibidem.

in a healthy port by vessels from infected West India ports, is a point which many yet deny. The evidence, however, in favor of importation is clear and conclusive, to those whose judgments are open to impartial testimony. There is a certain condition of atmosphere in cities and ports at times in the United States, when yellow fever infection will *not* readily spread and produce an epidemic. This is when the air is too pure, or too cool to disseminate the infection from a single point. There are other conditions of air in towns and cities, during the hot sultry season of summer and autumn, when this infection has spread rapidly from one or more points, and speedily induced an epidemic. These facts are well established. Even Dr. Rush, and many of his cotemporary disciples in the doctrine of domestic origin, admit that vessels have become thoroughly infected, and have communicated yellow fever to those about the wharves where they laid. True they contend that this infection was produced by some putrescent matters in the vessel or upon the wharf. But as to the fact of *the vessel being infected*, they entirely agree. If one vessel become infected, a dozen may. If one vessel can spread a malignant disease in a certain number of the population, a greater number of infected vessels may certainly spread that disease *more extensively.*

In adducing authority on this point we claim the full weight of their testimony with all impartial inquirers—because we have been careful to exclude the testimony of those who rank with contagionists. We have been careful to select the facts and admissions of those who are advocates of the theory for the local and domestic origin of yellow fever epidemics.

All testimony tends conclusively to establish the point, that ships, which have been long at sea in tropical latitudes, have occasionally become thoroughly infected with the miasm or infection proper of yellow fever, either while at sea or while in some West India port; that this infection has become so concentrated as to produce yellow fever in its most aggravated forms, in those who have gone aboard from our shores;

that such persons have taken genuine yellow fever and died with it, in five or ten days, after they first breathed the infected air of the ship, although at that time none of the sailors or hands on the ship, were laboring under that disease. In this manner doubtless, in some instances, has yellow fever begun to prevail in sea-ports, among the many who daily, unconscious of the infection, visit such ships while in port. In this manner, in many instances, have the first twenty or thirty cases been traced to intercourse with an infected ship, or to goods from the same. These first cases are generally persons near the wharves, draymen, day-laborers, and others who are engaged in assisting to unload the cargo. It is perfectly immaterial whether the ship brought the infection from a *foreign port*, or generated it during her voyage. If the air in her hold can be disseminated about the wharf, or even if it will cause those who visit the ship to die of yellow fever, it certainly is an *imported* disease to those who suffer.

A ship can certainly become infected, and much more completely than a house, or a district of a city. On shipboard, the air below is necessarily close for want of ventilation. We will not travel over all the mass of testimony which might be adduced: but will cite only a few instances in our own country, which are conclusive: for one unquestionable case, is as amply illustrative of the principle, as twenty.

Dr. Tully,* one of the most scientific physicians of Connecticut, gives an account of a number of cases of yellow fever at Knowles' Landing, in August, 1796. This is a village on the Connecticut river, about six miles below Middletown, containing a population of about two hundred souls, and situated on a steep declivity, with spacious and airy streets, and not crowded with houses. The number of cases that occurred at this place was eleven, of whom nine died. Every case was clearly traced to communication with a vessel which had recently arrived from Havana, on board which one of the sailors had died with yellow fever on the voyage. The whole number of cases occurred and terminated in the

*See New York Med. and Phys. Jour. vol. 1, p. 153–8.

course of a fortnight; for the alarm excited by the appearance of a malignant disease among them, caused a complete and speedy desertion of the village, and non-intercourse with the ship. This village has always maintained the character of uncommon salubrity. Up to the arrival of the infected ship, no disease of any kind prevailed; and immediately on the ship being abandoned by the inhabitants, the disease ceased. The infection on board this ship was not generated by putrefaction of either animal or vegetable matter, as none existed on board; and Dr. Tully declares that she was perfectly clean; no such matters were found in the town, or suspected by any as the cause of the disease: the ship was the undoubted source, and none were attacked but such as had been on board. In this case had the weather been such as generally *precedes epidemic* yellow fever; and had the inhabitants not fled, but remained, and continued their intercourse with the infected ship, the town would doubtless have been visited with *epidemic yellow fever*.

Dr. Tully informs, us that many other cases occurred at the different places at which this vessel anchored in ascending the river, and always in those only who had been on board. He also informs us, that, for the last twenty-five years, scarcely a year has passed, in which one or more similar cases have not appeared at different points on the Connecticut river; all of which are clearly attributable solely to intercourse with vessels from the West Indies, or from Southern ports of the United States.

Dr. Bayley,* health officer of the port of New York, gives an account of a number of cases of yellow fever which occurred in the autumn of 1821, at the "quarantine establishment," on Staten Island, six miles below the city. From the 8th of September until the 7th of October, twenty-nine cases and twenty-one deaths occurred; of the latter fourteen had black vomit. These were clearly traced to intercourse with infected vessels then lying at the wharf, and recently from the West Indies and New Orleans. The health of those about

*New York Med. and Phys. Jour., vol. 1, p. 27, 28, &c.

the "quarantine establishment" never was better, both immediately before and after these cases: nothing like bilious or remittent fever had been seen: neither marshes, nor filth, nor vegetable putrefaction existed any where in the vicinity. The cases were traced clearly to the ships, and to them alone; and each case occurred just five days, and one on the sixth day, after the particular exposure to the infected air of the vessels. A washerwoman and her two daughters took the disease, without having been on board the vessels. They contracted their disease by handling and washing the foul clothes and bedding of four men who had died of yellow fever, about four days previously. The bedding and clothes had been thrown aside until taken to her to be washed. She took the disease just five days after she had handled the clothes, and died on the fifth day of her disease; her daughters were attacked afterwards. In this case a favorable condition of the air would, no doubt, have caused it to become epidemic.

Dr. Bayley* also gives us the case of the United States' brig Enterprise, infected with yellow fever, at the "quarantine ground," in 1822. This vessel was perfectly clean, and free from any animal or vegetable putrefaction. She arrived from Havana with ten cases on board; and immediately the sick were removed to the hospital, and the well were quartered on shore to avoid the infected air of the vessel. She was then thoroughly cleansed, ventilated, washed, and whitewashed with lime, in a tenfold degree; lime was slaked in her timbers in large quantities. Yet, after this purification, she retained the infection, and communicated the yellow fever to those who afterwards went on board; of whom five, out of eleven, died. The process of purification was again instituted. Artificial ventilation with windsails was constantly performed; water to the depth of several feet, was daily let in and pumped out: lime was strewed in the hold, and her timbers thoroughly whitewashed, and still the infection was not destroyed until cold weather. In this case, her own crew having taken

*New York Med. and Phys. Jour., vol. 1., p. 426–7, &c.

the disease first, the people from shore avoided the vessel and escaped the disease.

Another case is given by Dr. Kollock, and quoted by Dr. Rush, in which a vessel at sea, in tropical latitudes, engendered on board a malaria which finally produced yellow fever. This is the case of the United States' frigate General Greene, which became infected while on a cruise in the West India seas, and did not become disinfected until she reached the cold climate of Rhode Island. During the time she retained the infection, every kind of cleansing, fumigation, and ventilation, were used freely, but ineffectually. In this case, the vessel was new, and perfectly clean and healthy, when she left Newport, Rhode Island, on the 3d of June, 1799. She had on board a complement of two hundred and fourteen souls besides large quantities of provisions for a cruise in the West India seas. Having encountered a storm, soon after she put to sea, the vessel became leaky, and a noxious malaria was generated, during a subsequent period of unusually *hot weather.* At first, and for some days, the disease assumed the symptoms of a violent bilious fever, with no deaths until they arrived in the port of Havana; when immediately several cases began to assume symptoms of *yellow fever.* "After this period," says Dr. Kollock, "three, four, and five new cases occurred daily; and the violence of the symptoms seemed to *increase with the multiplication of cases,* during the six days she lay in port."* Cases and deaths continued to multiply daily, until she passed the capes of Virginia, when the disease became gradually milder. The whole number of the cases was forty; and twenty of them died. In this case, an infectious air was generated in the ship's hold, by the number on board, during the hot weather and leaky condition of the vessel; and it appears that the "leaven" of infection was superadded at the port of Havana, either by persons going on shore, and contracting the disease there, or by the introduction of infected air, &c. Many other cases might be cited, in

*Med. Rep., vol. 4, p. 3.

which infection has been generated and carried in ships into ports, and there produced yellow fever in those from shore who entered on board, although the crew of the vessel, being acclimated, remained free from disease.

We will here make a few remarks again upon the generation of miasm on board ships in tropocal climates. The confined air in the holds of ships is more likely to be exhausted by respiration, and charged with human effluvia than even a city; especially where there are many souls on board, who are often confined below on account of storms and winds. In them thorough ventilation is extremely difficult, and the temperature is almost constantly up to the miasm point. The infectious air is thus rapidly formed in many cases, and in this state, a vessel arriving at a port where yellow fever prevails, will be ready to receive the leaven from the infected air of the city, either by the crew visiting the infected districts on shore or by the introduction of the infection in the form of *fomes* in goods. The United States frigate General Greene, before referred to is a good illustration.

The temperature at sea in tropical latitudes is seldom below 80° of Fahrenheit, and often from 90° to 100° according to the degree of reflection and concentration of the sun's rays. By a register kept by Dr. Thos. Rodman,* embracing thirty observations between the first of November and the fifth of December, at 12 o'clock, M., each day, between latitude 22° north, and 22° south, it was ascertained that the lowest temperature of the air was 79° and the highest in the shade 86°. The lowest temperature of the sea below the surface was 78°, and the highest 84°. The mean temperature of the air during that time, at 12 M. was 83°, and of the water 81.° Thus the temperature within vessels while in the tropics cannot be low enough to *destroy* or neutralize miasm, much less infection: the former requiring a temperature of 50° and the latter of 32° Fahrenheit. Thus however slowly it may be generated, it continues to accumulate until the ship enters a northern climate. This register was kept during a cool healthy sea-

*Vide Coxe's Medical Museum, vol. 1, p. 83–4.

son, when no disease was generated on board by hot, calm, and sultry weather; of course a much higher temperature in these respects is often experienced on board ships in the tropics; and the miasm and infectious air is often generated where no animal or vegetable putrefaction exists.

Infected vessels *do not always indicate their condition* by the disease developed *among their own crews or hands.* These may be perfectly seasoned to yellow fever miasm, by acclimation; or they may be natives of tropical latitudes, where yellow fever is indigenous, and consequently they may be protected against its influence by that kind of immunity.

Vessels have been known to leave West India ports, and after a long voyage, to arrive in ports of the United States, with all hands on board, in perfect health; and when none on board had suffered by yellow fever during the voyage. In these cases the infection had been carried into the hold of the ship in the form of *fomites*, by goods, beds, or other kind of freight, and, there confined, during the voyage in a close hot atmosphere, had become active and virulent. The hold being appropriated for freight alone, of course would be frequented little or none by the crew during the voyage, and would remain closed until the vessel arrived at her destined port. But so soon as she begins to discharge freight, the infected air is stirred up; and the hands and others passing into it are suddenly attacked with yellow fever and die. This has occurred too where no stench or putrid smell of any kind existed.

Dr. Bayley, for many years health officer of the port of New York, says: "I have known *many vessels* to arrive from ports where yellow fever prevailed, that were free from any unusually offensive smell, and their cargoes in a *sound state:* also vessels in *stone ballast*, from ports similarly circumstanced, *which were infected with the same contaminated air, that existed at the place they sailed from*, without its appearing to proceed from any foul materials generating it on board such vessels, that could be detected by the senses. The evidence of such infection was manifested not only by the crews and passengers, having died on board after leaving port; as these may

have contracted the disease before they sailed; but such of the crews as had apparenly *resisted* the *malignant influence of such infected port*, sickened *and died of yellow fever, after they began to discharge the cargoes*, (which were in good condition) at the healthy port."*

In this case the infected cargoes confined in the holds generated a virulent infection throughout the hold of the ship during the voyage through the tropical seas. The crews and passengers not visiting the *hold*, of course escaped the disease, until the hatches were opened in the port of destination. Dr. Bayley states that "*in other cases vessels were infected;* but that the crews being seasoned, *or acclimated*, have arrived direct from an infected port, and *remained healthy* during the voyage, and *during the quarantine;* the vessels being apparently in proper condition, and having no sickness on board, nor any sensible bad air; but so soon *as other hands* came to assist, or to be on board, *they sickened and died of yellow fever.*"†

Again Dr. Bayley declares that on the other hand he has witnessed at the New York quarantine ground, "that vessels have arrived from *healthy places* in tropical regions, with cargoes of *animal and vegetable matters in a state of putrescency*, with great foulness and the *extrication of much stench;* yet *no disease* existed among the crews or in those who assisted in discharging the cargoes."‡

Thus sustaining the doctrine, that the miasm or *infection of yellow fever* on *ship-board* as well as in cities and towns, is *entirely independent* of any *offensive smell*, or of any offensive or putrescent matters; and that those articles which throw off a putrescent stench are, in themselves, destitute of any power to produce yellow fever.

It is a point susceptible of proof, that towns and cities, even those in tropical latitudes, and upon the maritime borders of

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*See Dr. Bayley's letter to Dr. Townsend, in Townsend on Yellow Fever, p. 92.

†See Townsend on Yellow Fever, p. 93.

‡Ibidem, p. 93–4.

the U. States, *are not liable* to or endangered by yellow fever epidemics, provided *they have no commercial intercourse* with West India, or *infected ports.* Those towns and ports, which have good deep harbors, and enjoy extensive trade with tropical ports, are liable to annual or occasional visitations of yellow fever as an epidemic. Those too which are remote, or inaccessible to shipping, are known to be habitually *exempt from yellow fever in any form.*

Notwithstanding the general predisposition, or "epidemic constitution of the atmosphere" occasionally exists from Boston and New York, along the whole seaboard of the Atlantic to St. Augustine, and along the whole Florida coast, as far as New Orleans, and even as far as the Colorado, in Texas; yet we see yellow fever prevailing in only a few of them, and in those only which enjoy a constant commercial intercourse by water with West India or infected ports. Hence it has prevailed in New York, Philadelphia, Baltimore, Norfolk, Charleston, Mobile, and New Orleans, while scores of other points intervening are exempt and healthy. Nor does it prevail simultaneously in all of these. Why has it not prevailed equally in Albany, Harrisburg, Fredericktown, Washington City, Richmond, Columbia, or Tuscaloosa? Simply because it cannot reach them.

All these places and hundreds more are exposed to the same "epidemic constitution of air," in hot, dry, sultry summers; yet only a few are exposed to the *indispensable requisite, "the exciting cause"*—the *leaven* of infected air from ships, and infected ports.

Dr. Rush and others of his school, have repeatedly admitted, that the impure or miasmatic air which accumulates in the holds of ships at sea in hot, sultry summers, *is morbific,* and that in an impure or contaminated air, it may act as *"an exciting cause"* to induce *yellow-fever* in those exposed to its influence. So far as the people of such town or port are concerned, it can surely make little difference, whether this "exciting cause" be imported from a West India port, or whether it be generated in the vessel only three days before her arri-

val. And, if it has the effect of producing a malignant epidemic which they might and would otherwise escape, it could certainly be very little consolation to them to learn, that it was not the exclusive cause, but only "*the exciting cause*" of the disease; or even that it was produced by putrescent matters as the predisposing cause. City authorities would do well to exclude *such exciting causes.*

The only point remaining to establish the *importability of yellow fever* is, to show that this infected air, miasm, or by whatever name it be called, is capable of diffusing itself into the surrounding atmosphere near wharves, and thus disseminating the disease. Besides the possibility of this mode of disseminating the disease among the crowds who daily frequent the immediate vicinity of the ship wharf, there are many others who certainly contract the disease by direct intercourse with the ship, as laborers, merchants' clerks, draymen, and the like.

There are many subtile gases in nature, especially in diseases, which possess the remarkable and mysterious property of penetrating to a great distance through the atmosphere, and of insinuating themselves and combining intimately with it, in a manner beyond our comprehension. The wonderful diffusion of aromatic particles, and of the minute particles of all volatile matters of smell are familiar examples. By what force or power does the putrescent particles of decomposing animal and vegetable matters mount the winds and force themselves into every man's olfactories, whether he will or not? Other effluvia, far less sensible to our organs, diffuse themselves no less extensively through the air, and are detected only by olfactory organs far more acute than ours. The delicate and to us imperceptible odor of a deer or other living animal is thrown into the air hundreds of yards from him, so as to direct the hound in the chase. Although this to the hound is sensible and plain, it entirely escapes our senses. Why then should we expect, with our blunt sense of smell, to trace the mysterious and insensible aura which is thrown off in disease?

The only point remaining to establish the importability of epidemic yellow fever in ports, is whether the *dissemination* of the infected air of the ship in the vicinity of the wharf, among the crowds that frequent them, and reside near them, together with ten, twenty, thirty, or more cases, which were contracted by going on board such vessels, be capable of caus ing the disease to spread, among those contiguous, who do not go on board, and this when the temperature of the season, and the sultry, and if desired the miasmatic state of the air, is in the most favorable condition for disseminating the disease. Of this we think there can be no reasonable doubt. Dr. Rush, and his coadjutors in favor of the domestic origin of yellow fever, admitted that it might, and had occasionally, spread from ships in an impure air.

Dr. Mitchell,* one of the most able advocates of the local or domestic origin of yellow fever, in a report made to Congress, February 25th, 1803, admits, and even contends that vessels often become highly infected while at sea; that an impure air is generated in the holds during *hot, sultry weather*, in tropical climates; that this infection may be communicated not only to those who go on board, but that the infected air may be *diffused in the atmosphere* about the wharves and shipping, and thus excite the disease more generally. He contends, very properly, against useless and idle detention at quarantine, when no disease or infection has been on board the vessel; but he urges the necessity of detention, and thorough ventilation and cleansing, in case of infection, until the infection is destroyed. In all this he denies the *foreign origin*, or infection. But is it not immaterial to those in sea port towns, whether the infection be generated on board, or contracted in a foreign port? If it can *spread* among those where the ship arrives, it is as important to guard against it as if it were of *foreign origin*. Dr. Rush unequivocally admits that there is much danger to be apprehended from "the foul air of ships," where cases of yellow fever have occurred. He also admonishes us, "to prevent the landing of *persons* af-

*See Med. Repos., vol. 6, p. 460, &c.

fected with the ship fever, in our cities, and the *more dangerous practice of ships pouring streams of pestilential air from their holds upon the citizens, who live near the docks and wharves.*" Med. Rep., vol. 6, p. 166.

Again, in a communication from Dr. Rush and others to Gov. Mifflin, in relation to the yellow fever of 1797, in Philadelphia and Kensington, it is maintained, "that, *in addition to* the filth and putrefaction about the city, *the foul air* issuing from the holds of two ships, (designated,) *produced the yellow fever*, independently of foreign contagion." Again, the authors declare, that "the close, unventilated holds of ships, after *long voyages in hot climates*, with perishable matters on board thrown open in a *heated, sultry atmosphere*, are a fruitful source of miasm: although they infer, that "yellow fever has not been *so often* propagated by *contagion*, as has been supposed." See Med. Repos. vol 2, p. 95, 96.

Without multiplying authority we will cite one case which is full of instruction to those who preside over the port police of our cities. We mean the "yellow fever" of New York in the summer and fall of 1822. This epidemic, if it could be so called, commenced by scattering cases from the 15th to the 20th of July, and cases multiplied gradually until the 15th of August, when it was considered epidemic. The whole number of yellow fever cases, from the 15th of July until the 1st of November when it ceased was about four hundred and thirty; of whom about two hundred and fifty died. It began in Rector street, near the wharf, where four ships' cargoes had been discharged from infected vessels a few days before. From this point it spread very slowly over several squares in the vicinity, having extended only a few squares in thirty days: while the remainder of the city was unusually healthy. The squares over which it prevailed most fatally, were bounded by wide, clean, and airy streets, and the most substantial buildings in the city; no filth could be found in the vicinity; the infected air from the original infected point having been wafted thither by the winds.

These are the facts without speculation, viz: the first cases

began between the 15th and 20th of July. Between the 1st and the 9th of July, the cargoes of four infected vessels from Havana, were discharged at the wharf at the foot of Rector street, and stored in warehouses. Two of these vessels had lost some of their crews by yellow fever, on the voyage; the crews of the other two were Spaniards and acclimated sailors. During the first two weeks of July, the weather was very warm, the sun cloudless, and the air "*very calm and sultry.*" During the months of July and August, there were almost daily arrivals of other vessels from Havana, and other ports where yellow fever was known to be prevailing. During this period, the number of vessels from West India ports was unusual; because, on account of the terror of pirates, they came in companies, under the convoy of battle ships. The following are the arrivals at the quarantine ground, between the 11th of June, and the 17th of October, viz: From Havana, eleven vessels, having, or having had, on board forty-four cases of yellow fever and twenty one deaths; from Matanzas, one vessel, with three cases of yellow fever; from St. Jago, two vessels, having had three deaths from yellow fever; from Port au Prince, St, Domingo, four vessels, with six deaths from yellow fever; from Vera Cruz, between July 17th and 28th, three vessels, with nineteen cases and two deaths from yellow fever, before arrival. Besides these, there were, during that time, about forty other vessels from Southern and West India ports, whose crews, being Spaniards or acclimated seamen, had no cases during their voyage, although the air in some of the vessels proved infectious to those who were unacclimated.

If any one will take the pains to examine the accounts of this epidemic, as detailed by Dr. Townsend,* Dr. Bayley, and Dr. Walters, and after making every allowance, especially to Dr. Townsend for his views of contagion, of that charity which the advocates of the *exclusive local origin* of yellow fever are so ready to bestow, he will find ample reason to admit that the atmosphere about the wharves was *contaminated by the infectious air imported in ships from tropical climates.*

*See Med. Repos., vol. 4, p. 7 & 8; also, vol. 3, p. 46 &c., A. D. 1800.

A case presents directly in point, on this subject, as well as in relation to the agency of putrid exhalations and marsh miasm in the production of yellow fever. The town of Campeachy is situated on the Gulf of Mexico, in latitude 19° 45' N.—Vera Cruz is situated about three hundred and fifty miles distant, but in about the same latitude. Campeachy is healthy, and Vera Cruz is visited annually with yellow fever. The circumstances generally considered most favorable to the production of yellow fever, are equal in both places. Campeachy is built mostly of stone, upon a substratum of limestone rock; the soil of the surrounding country, as well as a part of the town, is a sandy loam, and often becomes very muddy; the town is surrounded by a stone wall about ten feet high; the streets are wide; the houses are large and airy; on the back part of the town, there is a high hill, or moderate mountain, which greatly interrupts ventilation, so that the inhabitants suffer greatly, from "all the inconveniences of a sultry, confined air." "In front of the middle of the city, is a large wharf or mole, extending one hundred yards into the water. Along this mole, there is constantly deposited large quantities of filth of every kind, together with "large quantities of *putrid fish*." "When the tide, (which rises and falls two or three feet,) retires, all these matters are left exposed in the mud, and on the shore, to the direct rays of a vertical sun, until the stench is intolerable to strangers." Besides these things, there are also other "accumulations of filth in other parts of the town." Yet "the inhabitants are very healthy;" there is only one physician in the place, and he has not half employment in his profession, although "the population is about ten thousand." (See Med. Rep. vol. 4, p. 5–8.) Vera Cruz is situated upon a sandy plain, with sand hills in its rear; contains no more filth than Campeachey; the air is no more confined or sultry, the inhabitants are no less temperate, yet Campeachey is healthy, and Vera Cauz is annually visited with yellow fever of the most malignant type. (See Med. Repos., vol. 4, p. 7 and 8; also, vol. 3, p. 46, &c. A. D. 1800.)

How is this paradox explained? Campeachey has an extensive, but shallow harbor, so that large ships cannot approach near the town; only boats and small craft can enter the harbor, such as do not exceed fifteen or twenty tons. Hence, so far as commerce with remote regions, and the foul air of large ships, from long tropical voyages, are concerned, it is equivalent to an inland town; and it is also free from the crowds of *strangers*, who infest large commercial ports. But Vera Cruz carries on an extensive commerce, has a fine deep harbor, and thus does not lack for infected air from ships, and crowds of strangers upon whom it operates These, when attacked, contribute to the infection, which is like "leaven" in the contaminated atmosphere, and assists in producing the epidemics. (Ibid, p. 78.)

Although the yellow fever is endemical all the year in Cuba, it is almost exclusively confined to the commercial ports. The elevated savannas of the interior are as much a stranger to it, as our own interior towns. In the ports, it attacks principally strangers, and prevails mostly from the beginning of July to the middle of November. When there is a great influx of strangers, it becomes more malignant, and finally attacks many of the acclimated inhabitants, especially such as are exposed to the ordinary exciting causes of fevers. It is believed, among the people of Cuba, that the influx of strangers, and their numerous attacks from yellow fever, contaminates the air, or infects it, and causes it sometimes to become epidemic, when otherwise it would not have prevailed.

(TO BE CONTINUED.)

ART. II.—*Fungus Hæmatodes removed by excision, and a radical cure effected.* By JOHN TRAVIS, M. D., of Carroll County, Tennessee.

Previous to giving an account of the cure of the disease which stands at the head of this article, it may not be improper to make a quotation from the works of Samuel Cooper, M. D., a member of the Royal College of Surgeons, in London:

"We are indebted to Mr. Burns, of Glasgow, for the first distinct account of this formidable disease; and the subsequent and additional particulars of the subject, by Hey, Wardrop, and others, afford a good deal of information respecting the history of the distemper. It commences with a small colorless tumor, which if soft, when not covered by an aponeurosis, but firm when situated beneath it. When the disease occupies merely the adipose, cellular membrance, upon the surface of the muscles, the tumor is not usually painful in its beginning; nor does it impede the motion of the muscles on which it is seated. But when deeply seated in the limbs, it causes pain and weakness of the part affected. Also, when it occurs in the mamma, its growth is attended with considerable pain. For a considerable time the tumor is smooth and even, but afterwards projects irregularly at one or more points, and here the skin becomes thinner and of a livid red color. The swelling has a considerable degree of elasticity. yielding to pressure and rising again, immediately when this is taken off. The sensation of a fluctuation often seems to be so manifest that the mistaken surgeon plunges a lancet into the tumor, with the intention of discharging the fluid supposed to be present. An error of this kind is generally a serious one, as a painful bleeding fungus, which rapidly acquires a very large size, shoots out of the opening, and, by the irritation and loss of blood which it occasions, soon destroys the patient. But in the natural course of the disease, openings are at length formed in the projecting parts of the swelling, and their bloody matter is discharged. Almost immediately after the formation of

these apertures, a small fungus protrudes, which rapidly increases both in breadth and height, and frequently bleeds profusely. The discharge is thin and exceedingly fœtid. The integuments round the ulceration are red and tender. If the patient survives similar tumors frequently make their appearance in other situations.

"There is no remedy with which we are acquainted that seems to have the least power in checking this formidable disease; all escharotics, even undiluted *oil of vitriol*, are incapable of destroying the fungous growths as fast as they are regenerated. Nothing seems to offer a prospect of preserving life except the early and total removal of the disease with the knife. This, of course, is not always practicable on account of the situation of the tumor; when it can be done, no part of the surface, surrounding the tumor, should be left, as the disease would certainly recur."

From this brief history of a disease so formidable and herculean in its character, an attempt to perform a radical cure must appear arrogant or presumptuous; and when I was called to the case, which will presently be related, I told the patient and his friends that it was *possible* that a cure could be effected, but extremely improbable. I intimated that I would use every suitable effort to remove the disease and prolong life.

Harman Gardner, of Carroll county, Tennessee, ætat. 30, at the age of 10 years had a burn on the occiput, which was cured in the usual time and a perfect eschar formed. In the year 1832 an accidental injury was inflicted on the eschar, which caused a slight hemorrhage. He had no apprehensions from so trivial an injury, and continued to pursue his ordinary occupation. The wound, however, failed to heal after the application of various domestic remedies. At the expiration of 10 or 12 months, a fungous growth commenced; blood, of a fœtid character, continually oozing out of it in small quantities. It became very painful, and in the course of 7 or 8 months attained the size of a goose egg. It was very springy, resembling the common fungus or mushroom. By this time he was unable to labor, and could not wear a hat on his head.

He called on Dr. Hogg, of Huntingdon, who informed him that his disease was a *Fungus Hæmatodes*, and that the only means of relief was that of an operation, to which Mr. G. would not then submit. He then applied to a faith doctor, in Kentucky, who promised to cure him. After making a fair trial with the faith doctor and finding no relief, and his case assuming an alarming character, he sent for me to see him in March, 1834. I removed the large tumor with the scalpel, losing about 2 pints of blood. I applied a powder, every third day, composed of arsenious acid, opium, and sulphur. Ordered him to take a 6 gr. blue pill every other night, and gave him a decoction of the root of the laurus sassafras for his ordinary drink; diet light. He had an excellent nurse, a sister, whom I ordered to remove, with a keen instrument, every particle of fungi that might, from time to time, appear; which was done accordingly. On examination I found two more fungi, near the nape of his neck, about the size of a partridge egg. They had assumed a red livid appearance. I advised the patient to have them removed, but he would not consent, asking permission to wait a week or two. In two weeks I again visited my patient, and found the appearance of the sore favorable. The other two fungi had penetrated or ruptured the integuments, and were bleeding. I found other two tumors of the size of a pea, one on his left scapula, and the other on his neck. They had not yet caused a discoloration of the cuticle. I removed the four tumors with the knife, and gave the same prescription as above, adding an occasional anodyne.

In four months my patient was well, and has remained so ever since, without the slightest symptom of a return of the disease. He is now married, follows his ordinary labor, enjoys excellent health, and remains a citizen of Carroll county.

June 8, 1841.

REVIEWS.

ART. III.—*Insanity and Asylums for the Insane—Five Lectures.* By W. A. F. BROWNE, Surgeon and Superintendent of the Montrose Asylum: Edinburgh, 1837.

Two Reports of the Ohio Lunatic Asylum, 1839–40.
Eight Reports of the Massachusetts Lunatic Asylum, 1835–40.
Sixteen Reports of the Kentucky Lunatic Asylum, 1824–40.
Seven Reports of McLeon Asylum for the Insane, 1834–40.

The first of these works consists of the substance of five lectures, delivered before the Managers of the Montrose Royal Lunatic Asylum, and answers these five questions:

What is Insanity?
What are the statistics of Insanity?
What Asylums were?
What Asylums are?
What Asylums ought to be?

This is a most useful and interesting book. It is intended both for the profession and for the people at large. No physician can read it without profit; nor other man without satisfaction. It is not so elaborate as Pritchard's work upon insanity; nor so diffuse as that of Esquiral, but it is the result of Dr. Browne's own observation. It is a clear description of what he has seen and felt, and the sufferings of the wretched lunatics of former time, are so faithfully depicted that our sympathies are involuntarily enlisted in their behalf. This treatise does

credit both to the head and to the heart of the author: and we would gladly transcribe it entire to our pages, if we had room; as it is, we must be content to give the substance of its most important portions.

In no ailment, which humanity is heir to, has there been so great a change, as to its pathology and its treatment, as in insanity. In ancient time lunatics were considered as possessed of devils, and under the especial influence of evil spirits. It was supposed that these demons acknowledged no law; that they came not in the usual way of human disorder; nor would they yield to the usual remedies. This supernatural disease required a similar power to heal it. These then looked for the especial intervention of Heaven, to arrest the mental vagaries. and then miracles were wrought and the insane restored. But when the age of miracles had passed by, superstition still preserved the same pathology, while religion ceased to offer the same means of relief; and as this pathology was out of the reach of human investigation—so no science bethought itself, to apply any human aid for restoration; and the poor lunatic was left in hopeless alienation; a prey to his wild fancies or his terrible oppression. Unfortunately this theory of the disease has remained till within the last century; and, notwithstanding the immense improvements that were made in the treatment of all other derangements, almost none has been made in those of the mind.

So often were cases of insanity decisively of a moral cast, and connected with fury, madness, and crime, that it was no difficult matter for the world to suppose that these were deserted of Heaven, and given over to the evil one; and that, therefore, the sane were called upon to defend themselves against these dangerous men, and to put such restraints upon them by prisons and chains as would save themselves harmless. Then these outcasts of timid society, were left to pine away in miserable confinement, with no eye to discern the real nature of their disease; no medicine to relieve the nervous system of its incubus; no soothing to calm its distressing excitement.

If the insanity were merely intellectual, and the lunatics only thought wrong; if their passions were still, and their hands harmless, they were suffered to wander as a sort of privileged vagabonds, or live among their friends as a kind of domestic animals. But if they were furious or mischievous, their insanity was a crime, and the penalty corresponding was required of them.

For many ages convents were the principal receptacles of this class of men. In these establishments were strong rooms with solid walls, oftentimes under ground, and as if these were not enough to defend fearful society, chains and handcuffs were ready to be used. Here they underwent the privations which the monks inflicted upon themselves, whether for discipline or for cure is not known. In one convent, in the South of France, ten lashes a day were administered to every lunatic as his share of the monkish benevolence.* To these ascetics, who courted torture and self-chastening, this probably seemed good treatment, and they were almost the only guardians of the insane before the French Revolution.

It was one stage of improvement when hospitals were opened for the insane. These purported to be asylums for the weak and disordered; but they were rather asylums for men's fears, and prisons for the lunatics. They were strongly built with thick walls, narrow windows and barred doors. They were furnished with handcuffs, fetters, muffs, chains, strait waistcoats, confining chairs, and all the means to prevent the maniac from escaping or doing harm to his keepers. "At Rome, iron rings, armed with chains, and fixed in the wall, serve to confine the furious and turbulent maniacs, who are fastened by their necks and feet."† "In one room were two rings fixed to the wall, one ring was to embrace the neck, the other the ankle, and the poor maniac was doomed to stand or suspend himself by the neck."‡ "The accommodations in the asylum at Limerick, appear to be such as we should not appropriate for our dog kennels."‖ "One victim was confined

*Browne, p. 101. †Pritchard, p. 249. ‡Browne, p. 118. ‖Browne, p. 104.

in one of the oblong troughs, chained down; he had evidently not been in open air for a considerable time, for when I made them bring him out, he could not endure the light. Upon asking him how often he had been allowed to get out of the trough, he said 'perhaps once a week, and sometimes not for a fortnight.' He was not in the least violent; he was perfectly calm."* Esquirol says of the insane in France, "I have seen them naked or covered with rags, with nothing but a layer of straw to protect them from the cold dampness of the ground upon which they lay. They were kept upon food of the coarsest kind; they were deprived of fresh air to breathe, and of water to quench their thirst; and even of the most necessary things of life. I have seen them given up to the brutal supervision of jailors. I have seen them in their narrow cells, filthy and unwholesome, without air or light, chained in such dens as one might fear to confine ferocious beasts."† Similar to these were the abodes of the insane throughout Europe.

The whole arrangement and apparatus of these establishments were for security; to save the public from harm; to defend the keepers and to make them as little trouble as possible: often the manacles were used as the cheapest way of governing them, and thus the expense of attendants was reduced.‡

The keepers of these asylums were corresponding to these prison houses. They were strong and coarse men, with stout muscles and iron hearts, and without fear. Their vocation was to keep and not to cure their subjects. They had neither humanity to pity, nor gentleness to soothe their diseased excitement, nor skill to ascertain or remove its cause. "They knew no other means but fear, to maintain order among them. These officials, who were as barbarous as they were ignorant, knew no other methods to persuade, but the use of chains, whips, and dungeons,"‖ and sometimes the mad passions of these keepers, excited by the perversity of their words, reacted upon them, and made the furious ferocity of

*Parliamentary Report, 1815. †Des. Maladies, Montales, Iom., 11 p. 400. ‡Parl. Rep. 1815. ‖Riel, quoted by Esquirel.

the insane to rage still more violently, and perpetuated the very evil they ought to have relieved. To the uncontrolled passions of such men were the defenceless insane too often given up, and few cared to inquire into the manner in which they administered their trust.

In these hospitals nothing was done to heal the malady of the mind. The old notion of its supernatural origin had, at least, the effect to confirm and perpetuate it, by withholding from the guardians all thought of relief. Nevertheless some singularly ludicrous practices were discovered in a few of the British Hospitals. "In one it was the established rule that every patient should be bled every June, and that each patient should take four emetics a year." "When the physician paid his regular visits, which were few and far between, the patients were arranged in two rows, between which he passed rapidly, receiving reports of their cases at second-hand from the apothecary, and prescribing, guided by some intuitive knowledge, in this fashion—No. 1, a purge; No. 2, an emetic; No. 10, bleeding, &c."*

Of moral treatment there was none for the good of the patient, nor was there power in the hearts or understandings of the keepers and attendants to give it. Their management had the effect to aggravate, not to diminish the disease. No attempt was made to win the confidence of the lunatic, when he entered these sad abodes of alienation. Nor was there labor or amusement prepared to occupy his attention and give him self-control during his sojourn within them. Galled by the needless restraints of confinement and manacles, goaded by the harshness of tyrannical treatment, it is not surprising that the spirit raved in maddened fury, until exhausted, it sunk into hopeless imbecility. As late as 1837, we saw in the Blockley Hospital, near Philadelphia, a poor female confined in a restraining chair made of plank, one strap confined each arm, another the waist, and another passed over the thighs and held her down to her narrow prison. This girl was in a state of furious excitement; she was using the great-

*Brown, p. 122.

est struggles to extricate herself; she was kicking up her feet, endeavoring to strike any one near her; she was boisterous, and spat on any one within reach; she was the very image of a raging fury: and we were told that she had been in this excitement for three years, and the same means of straps and chairs had been as long used to calm her! We trust a similar instance cannot be found elsewhere in America.

These hospitals were once the last resting places of the living maniacs. There they were soon forgotten by their friends without, and too often neglected and abused by their masters within. Very few of the sane world ever entered those abodes of madness and wretchedness to learn their condition, and still fewer of these crazed outcasts returned from that bourne to tell the tale of their sorrows.

Pinel first called the attention of the world to the state of the Lunatic Asylums in France. He had the unprecedented courage in 1792, to unchain their miserable occupants, and to treat them as human beings. Some of them had been chained forty years; some had so long been confined in one crooked position, that their muscles were contracted and their limbs drawn up. Some could not stand; others could not walk: one for almost half a century had not breathed the fresh air, nor seen the vault of heaven. Pinel was thought himself almost a foolhardy monomaniac, to dare to let loose those madhouse prisoners, and men feared for his and for their own safety. But the result was calm and most gratifying. These maniacs were grateful, quiet and peaceable. The story of this deliverance is thrillingly told in almost every work on insanity. It opened men's eyes and the prison doors of the insane: and since that time benevolence and true science have begun to reign over the asylums in France.

About the year 1815, the British Parliament caused investigations into the condition of the madhouses of England, and some frightful revelations were made in consequence. Some of them are stated in the foregoing pages. They are found in the second lecture of Browne; they astonished the

nation. A reformation was demanded and begun. "From a blind and hard hearted policy, which sacrificed every tie of justice, and charity, and human fellowship, a sudden transition was made to a system, based upon a knowledge of the human mind and on the common sympathies of our nature, and had for its object the eradication or amelioration of the evil. From darkness they passed into light; from savage ferocity to christian benevolence."* Insanity is now known to be a physical disease, and as amenable to human remedies as any other. It is now an object to restore the lunatic to life and society, not to bury him from sight and hope. And the tender charities, and most faithful skill have taken the place of cowardice and cruelty, in the administration of asylums.

This cheering and honorable change is rather going on now than finished. There is yet much to be done. Greater improvement has been made in some of our American Hospitals than in any of the world; yet others hang far behind the light of the age; their narrow cells, their strong rooms, and their strait waistcoats, have not all been replaced with gentler means of government. But notwithstanding these relics of the former age of ignorance and malpractice, greater progress has been made in the arrangements of the houses for the insane, and in the treatment of their malady, within the last twenty years, than was made in all preceding time. Now these houses are open, airy, and cheerful—formerly, they were strong, close and gloomy. What these American asylums are, we will show from their own documents.

The Massachusetts State Lunatic Hospital was built by the State, at Worcester, and opened, January, 1833, for the accommodation of lunatics and persons furiously mad, who were dangerous to be at large; and were therefore confined in jails; and houses of correction for those, who were supported at the expense of the towns, and for others, who were with their friends.

This establishment consists of a centre building 76 feet long

*Browne, p. 129.

and 40 feet wide, and 4 stories high; two front wings each 90 feet long, 36 feet wide and three stories high; and two rear wings each 100 feet long, 34 feet wide and three stories high, extending backwards at right angles with the front. The centre building projects 22 feet in advance of the wings; the front part of this contains rooms for the superintendent and family, and the offices of the physicians and apothecary. In the back part are the dining rooms of the insane.

Half of the width of the front wings is attached to the centre building, and half falls in the rear. "This arrangement allows the long halls of the wings to open into the external air for ventilation." All the wings are divided in each story by a long hall, 12 feet wide in the front wings, and 10 feet wide in the others, running the entire length, and opening at each end outwardly, and allowing a free draught of air through the whole. On each side of each of these halls are the apartments for the insane; these are 10 feet long and 8 feet wide; in each room is a large window with an entire cast iron sash; the upper half of which is glazed, the lower half is open, and a lower wooden sash, glazed, covers, and precisely corresponds with the open part of the iron sash. Every room, for the patients, is supplied with a bedstead—a good straw bed and hair mattress, with sufficiency of blankets, sheets, pillows, &c., and those occupied by the quiet patients have chairs and tables. There are 12 of these halls, and 273 rooms for the accommodation of 238 patients, the superintendent and family, and about fifty overseers, attendants, servants, &c., necessary to conduct its various departments of business and care.

There are, beside these, a chapel, a carpenter shop, shoe shop, wood-yard, farm, and flower-gardens, for the employment of the patients; six large covered verandahs, each 34 feet square, for exercise in stormy weather; carriages and horses for riding; a library; chess, gammon, and chequer boards; musical instruments; and also gravelled walks in the woods, and in beautifully arranged gardens, for the amuse- and occupation of the insane.*

*Reports.

Dr. Samuel B. Woodward was most happily selected for the superintendence of this great establishment, and his eight years of successful management have fully justified the highest hopes of science and humanity. "Every thing," say the trustees, "has been done by the intelligence, benevolence, and firmness of the master-mind of that extraordinary man, who superintends and sways, with consummate skill, the discordant elements, over which he presides, and who has raised the reputation of the State Lunatic Hospital to the rank of a model institution; alike admirable for its humanity economy, and success."* This institution was opened for the worst class of lunatics, criminals, dangerous men, and paupers; the denizens of jails, work houses, poor-houses, and cages, or vagabond wanderers. Some had been imprisoned for various periods, from one to forty-five years. In course of the first year, 107 were received, "who had been adjudged by the courts to be so furiously mad, as to be too dangerous to the peace and safety of the community to be at large." One hundred considered mankind as their enemies, and were, therefore, ready to do violence to any keeper or attendant. Forty had stripped themselves and would not be clothed, even in the severest weather of winter; and many had committed homicide.

One hundred and fifty-three were admitted during the year 1833; of these 105 had been insane more than one year; 20, on an average, three years; 71 from five to forty years; and 14 had no record or friends to tell how long they had been deprived of their reason. A more hopeless class of patients were never gathered together into one asylum. The cost to the State and the towns, for maintaining and guarding these, had been about $40,000 a year.

*Eighth report.

The following table exhibits the statistics of the receptions for eight years.

	Old cases.	Recent cases.	Whole number.	Average population of Asylum	Expense of the Asylum.
1833	105	48	153	107	12,196
1834	55	64	119	117	16,941
1835	58	55	113	120	16,576
1836	65	60	125	127	23,272
1837	95	73	168	163	26,027
1838	95	82	177	211	28,739
1839	95	84	179	223	29,474
1840	87	75	162	229	27,844
	655	541	1196		180,969

Causes of Insanity.

Intemperance - -	185	Abuse of snuff and tobacco	7
Ill health - -	185	Hereditary or with insane kindred -	361
Masturbation - -	103	Periodical - -	239
Domestic affliction -	129	Homicidal - -	18
Religious - -	84	Actual homicides -	13
Loss of property and fear of poverty - -	71	Suicidal - - -	134
Disappointed affection	53	Actual suicides -	5
Disappointed ambition	27	Arising from moral causes - -	344
Epilepsy - - -	35	Arising from physical causes - -	319
Puerperal - -	30		
Injuries of the head -	16		

Such were the means with which they were to work, and such were the materials on which they were to operate. What was the result of their labours is now to be shown.

It is worth while to observe, that for the State there were two objects, economy and security; the first table shows how the former was accomplished in reducing the cost of maintenance of the pauper lunatics from an average of $[illegible]0,000 per year to an average of less than $23,000, beside the interest on the cost of the whole establishment; and the superintendent's salery, which is about $2,000 a year. Public security is of

course obtained; for none, except such as are either recovered or so far amended as to be pefectly harmless and peaceable, are ever permitted to go beyond the control of the hospital.

But the gain to the individuals who have suffered the pains and deprivations of insanity, and have now recovered the possession of their moral and mental powers, and are restored to the happiness of home and the responsibilities of society, exceeds all pecuniary calculations.

Table, showing the admissions, recoveries, per centage, and deaths.

	Admitted.	Discharged.	Recovered.	Recovered pr. ct. of all discharged.	Recovered per cent. of admissions.	Improved.	Eloped.	Died.
1833—Old, - -.	105	20	11	55	$10\frac{1}{2}$	2	1	4
" Recent,	48	19	14	$73\frac{1}{2}$	$29\frac{1}{6}$	5		
1834—Old, - -	55	49	10	$20\frac{1}{2}$	$18\frac{1}{5}$	16		5
" Recent,	64	66	54	$82\frac{1}{4}$	$84\frac{3}{8}$	6	1	3
1835—Old, - -	58	60	9	~~87~~	$15\frac{1}{2}$	20	1	4
" Recent,	55	52	53	80	$78\frac{2}{11}$	4		4
1836—Old, - -	65	49	9	$18\frac{2}{5}$	$13\frac{11}{13}$	9	1	5
" Recent,	60	57	43	$84\frac{1}{5}$	80	6		3
1837—Old, - -	95	63	17	$25\frac{1}{4}$	18	20		7
" Recent,	73	58	52	$89\frac{1}{2}$	$71\frac{1}{4}$	4		2
1838—Old, - -	95	70	12	$15\frac{1}{2}$	$12\frac{11}{19}$	18		12
" Recent,	82	74	64	$86\frac{1}{2}$	78	6		4
1839—Old, - -	95	97	16	$16\frac{1}{2}$	$16\frac{4}{5}$	27		17
" Recent,	84	71	64	$90\frac{1}{7}$	77	2		5
1840—Old, - -	75	85	18	21	24	26		11
" Recent,	87	70	64	$91\frac{1}{2}$	$73\frac{1}{2}$	2		4
8 years.	1196	960	505			173	4	90

In these eight years, 655 old cases were admitted, and 102 were cured, which is 15.57 per cent. upon all admissions; and 541 recent cases were admitted, of which 403 were cured, making 74.50 per cent. Beside these, there were 28 convalesing at the end of the year, which should be added to the number of cures, and this would make 79.74 per cent. recovered of all recent cases that entered the hospital.

Moreover 173 were discharged, improved; being quiet and inoffensive, though incurable, they were restored to their families. This is not all; those who are not discharged, nor even so much improved as to be safe to be entirely at large, are now made comfortable and have many enjoyments. They were before madly furious, in a state of painful excitement or overwhelming oppression; now they are quiet, and have the ordinary physical, and many of the social comforts of life. Their misery is alleviated, and they are objects of tenderness now, rather than of fear and ridicule as they formerly were. It is wonderful how this has been wrought by gentleness and firmness in the superintendent and his assistants. Some maniacs had been for years confined in solitary and cold dungeons, in a constant state of passionate agitation, too desperate to allow any fire in their cells; refusing to wear any clothing, devouring their food like wild beasts, and so mad that their keepers deemed it an act of heroism to enter their rooms; now they sit at a common table with others, calm and self possessed, with their knives and forks, taking their food in order and sobriety; clad in decent apparel, going to bed in composure; uniting in amusements, or joining in labour with cheerfulness and pleasure.* It is not unusual to see two men ploughing in the field, quiet, and attentive to their work, and performing it well, both insane, both having committed homicide, and had therefore been confined many years in prison, as dangerous to be at large.†

"One female had been exceedingly filthy in her habits, had not worn clothes for two years; had been confined in a filthy cell, for the same time, destitute of every comfort and tearing every thing to pieces that was given her. Now she is dressed cleanly, works some, takes her food and at table, in company with sixteen others, sings very pleasantly, when requested, and is very civil and agreeable a large part of the time."‡

We have not room to multiply instances; we quote these as examples to show how much the incurable cases of insanity may be ameliorated. These reports, without intending to

*Report. †Report. ‡3d report.

give all or even any considerable portion, yet detail to us cases of every class, in which the moral and medical means of the asylum had effected this improvement. There may indeed be no hope of the restoration to soundness of mind or affection, but the bitterness is taken from their cup of anguish, and they are harmless toward others, and often useful in their way.

The rules and regulations are printed in the volume of reports published by the State for distribution. These are very minute and judicious. They are established by the board of trustees, and rigidly enforced, upon all the officers attendants and patients. The superintendent is also the physician of the institution. The whole is under his government. He is required to live in the house: to have no other business, except consultations in the town of Worcester, and these principally in cases of insanity. The assistant physicians, chaplain, steward, matron, four overseers, twenty attendants, and eighteen other assistants, also reside in the establishment; are devoted to the service of the hospital, to the exclusion of every other avocation.

The overseers and attendants are required to be men and women of cultivated minds, and of the strictest morality. They must be calm self-possessed and gentle in their manners, and amiable in their tempers. They must be bold and firm, yet mild and gentle in their deportment toward the patients. They must use neither tobacco nor distilled spirits, either at or away from the asylum, as long as they are connected with it. Neither profanity nor angry or taunting language is ever allowed. The least violation of these rules is cause of dismissal from the institution. By this most rigid caution in the selection of attendants, they obtain such as have power to amuse, and dignity to command the the confidence of the patients, and thereby control their mental and moral wanderings.*

*The liberal reward given, for all service in the hospital, enables the trustees to command the best and most faithful attendance. The superintendent has a salary of $2,000, and the support of his family. The assistant physician has $600 and support. The steward and all subordinate officers and assistants are paid such wages as to command the best of their respective classes.

Labor, as a means of cure and amelioration, has been of signal advantage in this institution. Agriculture and gardening are the principal occupations; but they have also carpenters, cabinet-makers, shoe-makers, and tailors, all profitably and satisfactorily employed; for, "patients, who have been brought up to labor, as soon as their first excitement is over, request employment; it is granted, and considered by them as a great favor." "No convalescent recovers so rapidly or favorably as the laborers."

Amusements also are found to be very useful. The patients have their dancing and their social parties. They ride in the carriages; they walk in the gardens, or in the woods, or go into the village, and visit all objects of interest. They read, write, and play at chess and other games, and on musical instruments. They bowl and pitch quoits. The females sew, knit, embroider, aid in the household duties, and, in the summer, cultivate the flower garden. They join in the social and dancing gatherings. Some occupation or other is perpetually offered them, so varied, that they do not become weary of any one, and so successive, that they have no leisure to let their minds run after their delusions.

They have religious exercises in the chapel, morning and evening and on the Sabbath. From 120 to 150 attend them, and no congregation is more orderly or attentive. They have a power of self-control then, which they do not on other occasions; some, who are almost furious elsewhere, are quiet there. Since the chapel was built in 1837, about seven-eighths of the patients have attended service at the same time, and no instance of disturbance has ever occurred.

In this hospital, no harshness or violence is ever used: not a strait waistcoat has ever been there; muffs are not allowed, and rarely confining chairs. Mittens and wristbands are the only methods of restraint, and even these but seldom, and only when the safety of the patient requires it, never for the protection or the comfort of the attendant.*

*"At this moment, November, 1838, out of 230 patients, but one individual, either man or woman, in our wards has upon his or her person, any restraint whatever." 6th Rep. p. 59.

The greatest attention is paid to the physical health of the patients; and for this purpose medicine is frequently given, and often the insanity is entirely removed by this means. In the excited condition of the brain, during the early stages of the disease, medicines operate like a charm, and remove the irritation, upon which the excitement depends. They compose the agitated state of the nervous system and bring about quiet and repose, and the way is open for mental sanity.*

Dr. Woodward and the trustees have published copious annual reports upon the whole regime and progress of the institution. These reports cover a period of eight years, and about 1200 patients of every variety. Dr. W. has done good service to the profession, by his discoveries in the pathology and treatment of this malady, by his detailed descriptions of the means by which he attains his remarkable success, and by his tables of the statistics of the disease. He has analysed his cases with minute discrimination, classified them according to the cause and manifestation of the derangement, to the age, occupation and temperament of the patients, and shown the influence of all these upon the final result. The sum of all these observations is given in 20 tables, which present an invaluable mass of information and philosophical inference relative to the origin, progress and issue of this disease, such as is found in no other treatise upon the disorders of the mind.† We have no room for farther extracts, but refer our readers to the Reports, which are deposited, by the kindness of Dr. W., in the Library of the Louisville Medical Institute, and in the State Library at Frankfort.

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*8th Rep.

†Of course the proportion of various causes must differ in different communities. Dr. W. found that, in about 1000 cases, 20 per cent. were caused by intemperance; 20 per cent. by ill health; 14 per cent. by domestic troubles; 9 per cent by religious anxiety—60 per cent. were physical causes, 40 per cent moral causes.

Of the curability, in relation to cause, he proves that cases of insanity caused by ill health, 63 per cent.; by religion, 60 per cent.; domestic trouble, 59 per cent.; intemperance, 50 percent.; and masturbation, 27 per cent. were curable.

The McLean Asylum for the insane is situated in Charlestown, Massachusetts, about one mile from Boston, and is a branch of the Massachusets general Hospital, in that city. It was established in the year 1818, partly by State bounty, but principally by the means of private subscriptions, and is under the joint control of trustees, chosen by the State and by the subscribers to its funds. It has a small farm and abundant buildings located on a beautiful promontory, partially surrounded by small arms of the sea. With Boston in its front, Cambridge on its right, Charlestown on its left, and the country in its rear, it is in the midst of the busy scenes of active life, and rural enjoyment; near enough to them to have access to all their objects of interest; yet so far separated as never to be interfered with, or be disturbed by them.

The buildings of this establishment have been enlarged and increased from time to time, as the patients multiplied, till now there are ample accommodations for 130 insane, and the superintendant and steward with their families, and all the subordinate officers and attendants; and the whole cost of land, buildings, furniture, horses, carriages, &c., from beginning to end, has been about $250,000. From its great wealth, its magnificent and convenient architectural arrangements, and the abundant means of amusement and occupation, this may be considered as the best adapted to its noble purpose of all the asylums in our country.

It is under the superintendence of Dr. Luther V. Bell, a man who brings to his work a rare combination of skill and benevolence, of practical wisdom and faithfulness. He is aided by an assistant physician, steward, two supervisors, and a large corps of "attendants and nurses of cultivated minds and elevated moral feelings, who engage in their labors with a spirit of patience and self-denial, whose service is not servile, but who are companions of the unfortunate,"* and are able to secure their love, respect, and confidence. The number of these attendants varies with that of the patients. "We have not asked with how small a number we can get along, but

*Dr. Lee's report, 1835.

how many can be advantageously employed?"* "Generally there is one attendant to every four or five patients, independent of particular cases, where from suicidal propensity or other adequate cause, the whole services of one attendant are devoted to a single person."†

The construction of the asylum is so ample and convenient as to admit a more entire and favorable division of patients, into classes according to the nature and developement of their derangement, than is allowable in any other hospital. They can so distribute their inmates as to make more than a dozen different families of each sex; as wholly separated and removed from each other as can be desired. These families or classes have each their proper sitting rooms, sleeping and dining apartments, bathing rooms, &c., and meet each other only as far as is approved, at prayers, in certain kinds of employments and amusements. And by the proper use of these means, they are enabled to dispense almost entirely with restraining measures, or even rigid confinement; so that the strong rooms are not called into use more than three or four times a year. And they rarely have a patient, who does not sit at table with the others and eat with knife and fork.‡

The treatment of the patients is generally the same as that practised at Worcester; upon the modern principles of generous confidence and tenderness, watchfulness and occupation. This institution was the first that had the enlightened courage to try the experiment of mechanical labor, to prove the safety, expediency, and immense utility of putting sharp tools into the hands of the insane, and not the least accident has occurred although many hundreds have had the use of chissels, hatchets, &c.‖

This hospital has abundant "and various facilities for keep-

*Dr. Lee's Report. †Dr. Bell's Report, 1839. ‡Ibid.

‖And herein our safety lies: the patients, feeling themselves under no restriction, consider that they are placed upon their honor, and their self-respect being called into action, they would not forfeit the confidence and good opinions of the officers, for any consideration. Give a man constant employment; treat him with uniform kindness and respect, and however insane he may be, very little need be feared from him, either of mischief or violence.—Tyler's Report, 1836.

ing every moment occupied—a farm, a highly cultivated garden, a nursery of fruit and ornamental trees, the sawing, splitting and piling wood, a bowling alley, a billiard table for each sex, chess, cards, draughts, newspapers, drawing and surveying materials, a library, six horses, carriages, musical instruments, and other means of labor and amusement, which particular tastes may dictate."*

Mental and bodily occupation are the main reliance for the tranquillizing the excited mind and agitated feelings. Religious worship, the daily prayers, reading the holy scriptures, and singing are found very efficacious for the same purpose. The patients are allowed to attend divine service on the Sabbath, in the churches of their own choice in the vicinity; for almost every denomination has worship within a short walk of the institution. Thirty usually go out to these churches and no disturbance has yet happened.

Beside the great variety of work and amusement, in the hospital grounds, the patients are encouraged to walk abroad, to the gardens, manufactories, monument, the shipping, colleges, and other objects of interest, that abound within a few miles, and no elopement has happened from this liberty.

The whole administration is paternal, affectionate, and confiding; never violent, forcible, or suspicious; no strait waistcoats, hand-cuffs, chains, nor restraining chairs, are there. Mittens are sometimes used to prevent the violent from tearing their clothes, but not one in a hundred is ever thus confined, and never except with the specific authority of an officer. The leathern muff is also sometimes used to allay the vehemence of suicidal propensity, this is also very rare; confidence is, at first, offered the lunatic, "and he is made to understand, that the extent of his privileges will necessarily be dependant on his ability to comply with the rules and to control himself."†

The physicians and every officer and attendant are required to live at the asylum, and devote their whole time and energy to their work; and the least violation of the rules, the

*Bell's Report, 1839. †Bell's Report.

least neglect of discipline over their own tempers or habits, the least failure of gentleness or firmness toward the patients is good cause of dismission. But they are so well selected and so liberally paid, that this rarely happens.

The great munificence of the endowments of this institution, the experience, talents, and devotion of its governors, have enabled it to procure every thing that humanity can desire, skill can suggest or wealth can purchase, for the cure or comfort of the insane, and made it a most desirable abode for those lunatics whose means permit their transportation and residence there, wherever they may belong. And compared with the very great advantage for the recovery of the curable, and for the comfort of the incurable, the expense of $3 50 per week, for residents of the State, and $4 50 per week for residents of other States, is not great.

This being neither a public nor a charity hospital, none are admitted except such as can pay the above prices; but any one can be taken away, whenever the economy or impatience of friends demands it. Accordingly a great many are taken from the institution when they begin to improve, and before the recovery is established. This will explain the large number discharged as improved, but not cured.

In the reports of this asylum no division is made of old and recent cases, but the general results of all. The following table shows the admissions, discharges and condition of the patients when discharged, since the beginning of the asylum.

YEARS.	Admitted.	Discharged.	Unfit.	Eloped.	Died.	Not improved.	Improved.	Recovered.	Remaining.
1818 to 1836,	1311	1239	13	21	117	218	358	512	71
1837 to 1840,	545	490	8	0	43	52	98	290	125
	1856	1729	21	21	160	270	456	802	196

Which shows that, for the first 18 years, 41.32 per cent. of all discharged were cured, and 38.8 per cent. of all admitted. During the last four years 59 per cent. of all discharged, and 53 per cent., of all admitted were recovered. In the year 1838, 100 per cent., of all discharged, were recovered, leaving out of the calculation those which were taken away too early, and those who died. In all the 22 years 1 in 88 eloped; and 1 in 11½ died.

The Ohio Lunatic Asylum was built, at Columbus, by the State, for the same general purposes as that at Worcester, Mass., and was opened, for the reception of patients, 30th November, 1838. In its plan and its furnishing, in its internal and external arrangements, it is similar to the Massachusetts Hospital. It is situated about one mile from the city of Columbus, on a farm of 30 acres, and contains 153 rooms for the classification and accommodation of 140 patients, and with every means for their comfort and occupation.

During the year 1839 and 1840, of which we have reports, there were received into this asylum, 258 cases, embracing 170 that were of more than one year's duration, and 88 of shorter continuance. These were gathered mostly from places of confinement, jails, houses of correction, and poor houses. Some had committed homicide; others had committed lesser crimes; many were dangerous to the public peace.

This institution was most happily put under the charge of Dr. William M. Awl, whose successful administration has justified his early promise of good to the insane and to the State. He is aided by another physician and a large body of assistants, of suitable character, to command and to compose the people of their charge—all dwelling in the asylum.

As in the hospitals before described, the government of this is kind and watchful, never severe or violent. Harsh instruments of restraint are not allowed, nor any needless confinement. Labor, amusement, and religious exercises are the great moral means; and suitable medication, the physical means used for the cure of the mental disorders. The officers treat all the patients with tender respect, and the attendants

secure their good will by affectionate hospitality and attention to their wants. They offer them every allowable privilege, and encourage them to participate in the enjoyment of every pleasure, which their capacity and condition admit. They ride in the carriage; they attend the dancing, social, and musical parties. They have sports on the green; they walk abroad to the town and to the woods, under restrictions. They read, write, draw, and attend the religious services daily and weekly.*

The result of this excellent management shows the recovery of 85 per cent. of all recent cases discharged; 41.17 per cent. of old cases, and 66.66 per cent. of all cases discharged, in the two years.

Beside the entire restoration of reason and happiness to 80 of these afflicted ones, a vast good has been done to the incurables. Those, who before were a pain to themselves and a torment to their friends and dangerous to the public, are now made mostly quiet, comfortable, and even happy and useful. The sting of their mental death is taken away.†

This asylum accommodates 140 boarders, yet is not half large enough for the State of Ohio, and none are admitted from other States. An institution as useful as this ought to be sufficient to accommodate all the insane of its own State.

The Connecticut Retreat, for the insane, at Hartford, has been in operation seventeen years, and had charge of 1068 patients, of whom 601 have been cured, which is 56.3 per cent. of all old and recent, epileptic, idiotic, curable and incurable. The last report makes no division of chronic and recent cases; but, from the previous reports, we learn the facts in the following table:

	Old Cases.			Recent Cases.					
	Admitted.	Cured.	Per cent. of cures.	Admitted.	Cured.	Per cent. of cures.	Per cent of cures of all cases.	Deaths.	Eloped.
1824—1839.	464	112	24.1	537	451	84	56.2	60	0

*Reports. †Ibid.

This has been the most successful institution for the insane in the world. The great proportion of recoveries and small number of deaths are proofs of its good management. The means and methods of cure are similar to those in the best hospitals. The farm, gardens, and joiners' shops, afford abundant and useful labour. The carriage, walking, library, games, pictures, are sources of profitable amusement. Beside these, the women sew, knit, dance, and sing. Religious worship, morning and evening, and on the Sabbath, are now looked forward to by the patients with pleasurable anticipation.*

Dr. Amariah Brigham has been superintendant for one year, and has so far answered the high expectations of the friends of the Retreat. He has, for co-operators, an assistant physician, chaplain, thirteen attendants to take charge of seventy-nine patients, and four others, who have each the care of one patient, and ten other assistants for the household duties.† All reside at the house and are well paid. These are required to treat the patients with kindness and respect. Strait waistcoats, restraining chairs, and all these relics of barbarism find no place there.

This hospital can accommodate 100 patients, and had, in March, 1841, 79. These, if they belong to the State, pay $3 50 per week; if out of the State. $4 per week, and are well compensated for their money, by skilful attention and almost certain restoration to health.

The Vermont Asylum was established at Brattleborough, in 1816, partly by private bounty and partly by State grants, on condition that the poor of the State be received at $2 per week; others pay $3 per week. One hundred patients can be accommodated, and eighty-one were there, at the date of the last report, October, 1840. During last year 73 were admitted; 142 enjoyed the benefit of the institution; of these 54 were discharged, 1 eloped and 6 died. Of the old cases discharged 28 1-5 per cent. were cured. Of the recent cases 88 1-5 per cent., and of all 54 per cent. had recovered.‡

*Dr. Brigham's Report. †Ibid. ‡Dr. Rockwell's Report.

Dr. Wm. H. Rockwell has the whole charge, and manages it according to the plan, and with the success, of Dr. Woodward, at Worcester. A farm, shops, riding, reading and religiuos service are used among the moral means of cure.

The Bloomingdale Asylum, near New York city, is one of the finest institutions in the United States. It has beautiful grounds, means for riding, chapel for religious exercises, and a library, and accommodates about 140 patients. It has been 20 years in operation, and received 2486 patients, and cured 77 per cent. of the recent cases, and 11 per cent. of the old cases, and 45⅞ per cent. of all. Two hundred and twenty-two have died, which is 8⅚ per cent. of the whole. At the date of the last report, 131 were in the asylum under the superintendence of Dr. Wm. Wilson, aided by 20 assistants and other subordinates.*

The particular method of treatment is not described in the report before us; but, whatever it may be, such success as the tables show, argues a proper administration.

The Friends Asylum, at Frankford, near Philadelphia, was opened in 1817, and is now under the management of Dr. Pliny Earle, the resident physician. Six hundred and twelve patients have been admitted; and 259 were cured, 143 improved and 84 died This gives 42.3 per cent. recovered, and 13.7 per cent. died, of all that were in the asylum in 24 years.

This is an admirable establishment, under the control of the Society of Friends. It is large, elegant, well arranged, and capable of accommodating 65 patients. There is a farm, a grove, a little deer park, carpenters' shop, basket-makers' shop, library, cabinet, museum of natural history, a circular railroad, and a carriage and horses for the use of the inmates. Labour and amusement, religious worship, and lectures on science are very efficacious there. "Gentle manners, kindness, and the greatest mildness form the ground work of the system, by which the feelings of the patients are generally controlled and interested."† "There are no means resorted to, no system of

*Report for 1840. †Journal Med. Science.

treatment pursued of which every physician would not avail himself in his private practice."*

The Pennsylvania Hospital for the insane is situated about two miles westward of Philadelphia. It is a splendid establishment, and no expense has been spared in its erection. When finished it will accommodate 200 patients. There is attached to it, a farm of 42 acres, and all is under the care of Dr. Thomas S. Kirkbride, whose character promises much for the success of the institution. The insane, formerly in the Pennsylvania Hospital in Philadelphia, are removed to this new building.†

The Maryland Hospital, near Baltimore, can accommodate 150 patients. In six years it has received 393 patients, and cured 135, which is 33 per cent.; 34 have died which is 8 per cent. The means of cure are labor, agricultural and mechanical, gardening, and carpentering, amusements of walking, riding, fishing, reading, and games, and, not least important, religious worship. This is under the care of Dr. Wm. Fisher.

In Virginia there are two asylums, one at Williamsburgh, the oldest institution for paupers in the Union. It contains 60 patients: We have no report from it.

The *Western Lunatic Asylum* is at Staunton, Virginia, a State establishment, under the charge of Dr. Francis T. Stribbling. It has a farm, library, horses, carriages—a piano and other instruments of music. They have labour on the land, and cutting wood, parties, balls, games, sewing, knitting, and religious exercises. From 1828 to Nov. 1839, there were 157 patients admitted and 47 cured; of the recent cases 83 per cent. recovered.

The *Maine Asylum*, at Augusta, has been in operation only two months at the date of the last report. It had then received thirty patients, and had room for ninety more, and

*Report, 1841.

†Earle. Visit to thirteen asylums, for the insane, in Europe; and notice of other institutions in Europe and America. This is the most comprehensive mass of statistics on this subject that we have found. It contains a notice of forty British and continental hospitals, and twenty-two in the United States.

the usual means of occupation and amusement that are found in the best hospitals.

There is an asylum in Columbia, South Carolina, built by the State at the cost of $100,000, and one in Milledgeville, Georgia. A new building has been erected in the yard of the Charity Hospital, in New Orleans. But so narrow are the external accommodations that little can be promised for the lunatic, except shelter and protection. A large hospital is established by the State of Tennessee, in Nashville, for poor lunatics. There are city asylums in Boston, New York, Philadelphia, Baltimore, and Washington for the insane poor.

The *Kentucky Lunatic Asylum* is beautifully situated on the confines of the city of Lexington, in the midst of a small farm, on a gentle declivity. The hospital consists of a centre building 66 feet long, two front wings, each 62½ feet long, and two lateral wings extending backwards from the outer end of the front wings, and 22 feet wide; making the entire front of the building 235 feet in length. These afford room for 130 patients. There are 18 acres of land for exercise, but no shops nor other means of occupation or amusement. There is one other building for the incurables; and also one 20 feet square and two stories high, containing 16 rooms, for the violent and unmanageable. A part of the whole is surrounded with a high fence to prevent escape. Originally there were provided hand-cuffs, strait-waistcoats, and other strong apparatus for confining and restraining the patients according to the notions of the time, for the treatment of this class. This institution was primarily intended for lunatics who were mad and dangerous to be at large, and for insane paupers; but, afterwards, others were admitted from this and other States, by payment of $2 50 per week.

A little land is cultivated, vegetables for the family are raised, in the garden, by the labor of the patients. The nursing the sick, the care of the rooms, the cooking, the household work in general, and the making the clothing for the pauper insane, are principally done by the inmates. Yet the report for 1840, out of 201 patients, gives only 12 as at work: and of all those, who had entered within the last ten years,

only 4 are recorded as at work. If there be no mistake in this record, and those of 1839 and 1838 are very similar, we must conclude that labor is not required of the recent cases; nor is it used as a constant remedial means.

This asylum is under the supervision of five commissioners, who make annual reports, to the Legislature, of the condition and the yearly history of their charge. We have these reports, for the last seventeen years, now before us; and have studied them, with great care in the vain hope of ascertaining precisely how far, and in what manner the whole object of the institution had been accomplished. The substance of these is comprised in a table of the patients. This, in several columns, gives us the date of entrance, the age, sex, county or State, and present condition of the lunatic, and whether married or single. There is one singular column, which purports to give the diseases, but which is a strange mixture of causes and effects. Here we find under the same head, as insane disease, idiocy, catamenia, mania, blow on the head, melancholia, puerperal, hard study, epilepsy, lunacy, dolore, grief, á potu, hysterics. This column leaves a double question still open: we wish to know how the insanity originated, and what is its present form. Every one, conversant with this subject, knows that the puerperal state, epilepsy, intemperance, hard study, the moral affections and physical injuries are causes, and may produce any of the forms of insanity; and that mania, and melancholy, and idiocy, are effects, and may be brought on by either of the foregoing. Idiocy may be congenital, and in this sense it is used by most writers. In these reports it includes both those who were born idiots, and those who are in the last stage of dementia,* the fourth degree of inappetency of Pritchard: for we find, on comparison of reports of various years, that the disease of some is at first called mania or epilepsy, or á potu, and afterwards idiocy.

These reports give us no account of the length of the dis-

*This mistake is not peculiar to Kentucky, for Esquirol says, of some French writers, "They have confounded idiots with demented persons, and the reverse, and often with monomaniacs." Tom. 11, p. 283.

ease, previous to entrance into the asylum; nor of the resources for occupation of the patients, nor of the principles or details of medical practice; nor of the condition of those who were discharged previous to 1839. So far then as to giving the world any knowledge of the causes and nature of insanity, in Kentucky, or of its duration and curability, or of the internal economy and management of our State asylum, or its means for curing its lunatic residents, these annual reports disappoint our hopes. Probably they were prepared, not by any medical officer, but by the steward or commissioners or other persons, who are not supposed to be acquainted with the minutiæ of this disease.

Governor Adair, in his message to the General Assembly in 1821, urged as one reason for the establishment of this asylum, that it "would prove highly beneficial to the medical school, which would, in time repay the obligation by useful discoveries in the treatment of mental maladies."* This was the early hope; but so far from making any such discoveries, the administration of this hospital has not even adopted and practiced upon the discoveries, which have been made and published by others. Nor have any contributions been made to science from that source, excepting two valuable articles upon the legal and statistical history of the institution, from the pen of Dr. Theobald, in the Transylvania Journal, in 1829 and 1830.

Nor ought this to have been expected. The treatment of insanity is a specific study. It requires one's whole and undivided attention. Yet no physician has ever been so employed by the State, for this asylum, as to be able to give it his whole time and thoughts. The most that is done, is to hire one to visit the establishment daily, and this for a very small remuneration.† Living at a distance from the institution, with the necessary cares of miscellaneous practice, and the necessity of obtaining support by this, the most that

*Journal of Senate of Kentucky, 1821, p. 19.

†Cost of medicine and medical attendance for 1838, $341 88; for 1839, $373 38; for 1840, $264 04, being $970 30 for three years medical attendance and supply of medicine for 327 insane patients, and a constant average of 125. Reports.

could be expected of him, is that he should attend to the incidental diseases of the insane, but not to give that constant, anxious, and unremitting attention, which is needed for the cure of mental derangement.

The services of the medical faculty of Transylvania University were gratuitous and occasional, and therefore irresponsible for the permanent care of the insane. As this practice is entirely out of their usual routine of professional business and study, this generous offer of consultation aid, must have been of much less value than in ordinary diseases; for the incidental and temporary counsel, of all the most gifted of the profession, will avail little, in the cure of insanity, compared with the unremitting watchfulness of a single physician, exclusively devoted to it.

From May, 1824, to January, 1841, the asylum received 841 patients. Of these 337 died, (including 43 who died of the cholera, in 1833,) 78 eloped, 284 were discharged and taken away by friends, and 142 remained. We have no means of ascertaining what was the condition of those, who were discharged or taken away previous to 1839, whether they were cured, improved, or stationary. Nor what proportion of these were discharged, by request of friends, before the hospital had exerted all its influence for their restoration, or by desire of the commissioners, after they had ceased to hope. The following table we copy from the reports of 1839 and '40. It gives a concise statistical history of the institution.

I.

Showing the admissions, discharges, and deaths, in each year from the opening of the Asylum, in 1824, *to* 1*st January,* 1841, *and the relative proportion the two latter bear to the first.*

Year.	Admitted.	Discharged	Died.	Remained.	Total in House.	Average number.	Per cent. discharged.	Proportion discharged one in	Per cent. died.	Proportion died, one in
1824, - -	54	13	2	39	54	28.00	24.07	4.15	3.07	27.00
1825, - -	39	15	7	56	78	46.83	19.23	5.20	8.97	11.14
1826, - -	33	17	4	68	89	58.83	19.10	5.23	4.49	22.25
1827, - -	38	22	13	71	106	71.50	20.75	4.81	12.26	8.15
1828, - -	35	12	9	85	106	77.41	11.32	8.83	8.49	11.77
1829. - -	41	12	22	92	126	91.08	9.52	10.50	17.46	5.72
1830, - -	31	19	16	88	123	91.08	15.44	6.47	13.00	7.68
1831, - -	43	18	11	102	131	93.50	13.74	7.27	8.39	11.90
1832, - -	42	26	15	103	146	103.33	17,80	5.61	10.27	9.73
1833, - -	40	14	60	69	143	83.00	9.79	10.21	41.96	*2.38
1834, - -	52	27	10	84	121	76.41	22.31	4.48	8.26	12.10
1835, - -	54	24	21	93	138	91.41	17.38	5.75	15.21	6.57
1836, - -	57	24	26	100	150	101.08	16.00	6.25	17.33	5.76
1837, - -	68	33	22	113	168	106.91	19.64	5.09	13.09	7.63
1838, - -	63	25	29	122	176	117.09	14.20	7.04	16.47	6.07
1839, - -	86	37	35	136	208	132.49	17.97	5.62	16.83	5.94
1840, - -	65	24	35	142	201	136.93	11.94	8.37	17.42	5.74
17 years,	841	362	337			88,64	43.10	2.32	40.65	2.46

The third column, the discharged, includes all who were cured, improved, and stationary; and were discharged by the commissioners or were taken away by friends, or eloped. But these are more satisfactorily distinguished in the reports of 1839 and '40, which we give, condensed.

II.

Statement of the manner of discharge and condition of those who left the Asylum in 1839–40.

	Patients in the Asylum.			Taken away.	Died.	Eloped.				Discharged.		Total cured.	Total improved.
	Previously.	Admitted.	Total.			Cured.	Improved.	Stationary.	Total.	Cured.	Improved.		
Old cases, - - - - -	82	79	161	8	44	7	4	3	14	6	4	13	8
Recent cases, - - -	11	50	61	4	8	2	2		4	12	6	14	8
Idiots and epileptics,	29	22	51		18			3	3				
Total,	122	151	273	12	70	9	6	6	21	18	10	27	16

*This year 43 died of the Asiatic cholera.

The following table shows the comparative success of one Belgian, three French, thirteen British, and ten American Lunatic Asylums.

III.

Comparative view of twenty-seven Hospitals.

	Time.	In Hospital.	Cured.	Per cent. of cures.	Per cent. of deaths
European.					
Utrecht,* - - - - -	1832 to 1837	255	105	40.07	21.56
Charenton* - - - -	1826 to 1834	1205‖‖	516	42.82	26.64‡‡
Saltpetriere,* - - -	1801 to 1813	3007	1625	54.04	27.02
Esquirol's,* - - - -		335	173	51.64	
British.					
Bethlehem,† - - -	1819 to 1833	2445	1124	45.56	
St. Lukes,* - - -	1751 to 1801	6458	2811	43.52	
Wakefield,* - - - -	1819 to 1836	2242	991	44.20	31.64
Lancaster,* - - - -	1817 to 1832	1750	697	39.82	24.29‡‡
Stafford,* - - - - -		1000	429	42.90	
Retreat near York,*	1796 to 1835	508	236	46.43	
York,* - - - - - - -	1815 to 1837	1131	387	34.21	
Cork,* - - - - - -	20 years	1431	751	52.48	
Gloucester,† - - -	1823 to 1832	516	231	44.76	11.00
Liverpool,‡ - - - -	1836	102	46	44.65	10.00
Glasgow,‡ - - - -	1836	122	51	41.80	10.00
Lincoln,‖ - - - - -	1820 to 1838	715	285	39.87	16.27
Suffolk,§ - - - - - -	5 years	362	167	46.10	28.07
American Asylums					
Hartford,¶ - - - -	1824 to 1840	1001	563	56.02	5.9
McLean,¶ - - - -	1836 to 1840	616	290	47.00	6.2
Bloomingdale¶ - -	1823 to 1840	2496	1145	45.87	8.87
Worcester,¶ - - -	1833 to 1840	1196	506	42.41	7.5
Frankford,¶ - - -	1817 to 1840	507	214	42.21	14.00
Vermont,¶ - - - -	1837 to 1840	239	98	41.00	4.6
Ohio,¶ - - - - - -	1839 to 1840	258	80	31.00	8.5
Staunton,* - - - -	1828 to 1839	157	47	30.00	9.
Kentucky,** - - -	1839 to 1840	273	27	9.89	25.6
Hudson,†† - - - -	1840	84	22	26.02	5.7

*Earle. †Pritchard. ‡British Medical Almanac. ‖Hill. §Crowther, quoted by Woodward. ¶Reports. **Reports of 1839-40. This includes the accumulated old cases, and idiots and epileptics of former years. ††Boston Medical Journal. ‡‡This per centage of deaths is taken from another table in Earle, and does not cover exactly the same years as the other columns. ‖‖This does not include 274 paralytics, 62 epileptics, and 15 idiots; but it includes 492 incurable cases which had been in the asylum many years previous to 1826.—Esquirol: Tom. II. p. 490-91.

IV.

Of the per cent. of all cases in three Asylums, 1839–40.

	Patients in the Asylum.			Cured.		Per cent of cures.		Per cent of deaths.	Eloped.
	Total.	Old cases.	Recent cases.	Old cases.	Recent cases.	Old cases.	Recent cases.		
Massachusetts,	559	372	187	34	128	9.14	68.45	6.5	
Ohio, - - - - -	258	170	88	21	59	12.34	~~91.20~~	8.5	1
Kentucky, - - -	273	212	61	13	14	6.13	22.95	25.63	21

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V.

Of the per centage of all cases discharged, 1839–40.

	Discharged.			Per cent. recovered.			Per cent. died.
	Old.	Recent.	All.	Old.	Recent.	All.	
Massachusetts,	182	141	323	18.68	91.20	50.01	11.00
Ohio, - - - - -	51	69	120	41.17	85.50	66.66	18.00
Kentucky, - - -	97	34	131	13.04	41.17	20.06	53.00

VI.

Of the per centage of all admitted, 1839–40.

	Admitted.			Cured per cent.		
	Old cases.	Recent.	All.	Old.	Recent.	All.
Massachusetts,	182	159	341	18.68	80.05	47.00
Ohio, - - - - -	170	88	258	12.35	67.00	31.00
Kentucky, - - -	101	50	151	12.87	28.00	18.00

The third of these tables shows the comparative success of twenty-seven hospitals in curing the insane. The fourth column of figures shows the per cent. of recoveries of all that

were in the asylums during the time specified. The last column shows the per cent. of deaths.

The three institutions, compared in the other tables, are all established on the same principles and for the same general purpose—to receive the pauper lunatics and those who were dangerous to be at large. Table No. IV. shows the per cent. of cures upon all, enjoying the benefits of the hospital, for two years. No. V. shows the per cent. upon all discharged, and No. VI. upon all admitted.

The asylums in Kentucky and Massachusetts being old, contain an accumulation of incurable cases, which had resisted the efforts of previous years; therefore table No. IV. would show a per centage of cures in favor of Ohio, all of whose cases had at least been untried. The asylums in Ohio and Massachusetts, on account of their crowded condition, are obliged to discharge those who are incurable, but who are not dangerous to be at liberty; therefore the per centage in the table No. V., reckoned upon the discharges, might show a number of cures in favor of Kentucky. This last asylum undoubtedly admits a much greater proportion of idiots and epileptics (22 in 151)* than either of the others, hence the last table might exhibit a result against it as to the old cases, (for in that class are included all the epileptic and idiotic,) but not as to the recent cases.

Taking these three bases of the calculation, we believe these tables will show a true comparison of the influence of these institutions over their deranged inmates. But whatever may be the method of comparison, we cannot fail to be struck with the great number of deaths, the frequency of elopements, and small number of recoveries in our asylum.

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* "Very few were brought to the institution, except those of the very worst class of patients." Transylvania Journal, III., 88.

The census of 1840 gives 317 lunatics supported at public charge, and 516 at private charge, in Kentucky. Of these only 176 were in the asylum. The State allows pauper lunatics to be supported at their homes, out of the public treasury, if they be peaceable, and if that cost be no more than it would be in the asylum. Of course then the friends would be apt to send the worst, the most excited, and most fatuitous to Lexington.

In the last two years, with an average of 134,5 in the house, at Lexington, 35 died each year. In 17 years, out of 841 patients admitted, 337 died, which is 26 per cent. on the average annual population; and, after deducting the 43 deaths of cholera, 36 per cent on all admitted. In 22 years, the McLean asylum admitted 1856 patients; of these 160 died, which is 8.6 per cent. And in the Bloomingdale asylum, during the period of 17 years, 8.87 per cent. died. In the French and British asylums, the proportion of deaths is much higher than in the American, excepting that of Kentucky. The deaths in the European vary from 7 per cent. to 48 per cent. depending both upon the character of the patients admitted and the management of the hospital. Insanity is not, in itself, a very dangerous malady; yet it so affects the constitution, as to leave it open to the attacks of other diseases, and with far less power to resist them. Dr. Theobald says,* of the Lexington asylum, "The degree of mortality is to be accounted for, to a considerable extent at least, by reference to the wretched character and condition of a large majority of the cases occurring. A more particular account of these would have presented a number very infirm from advanced life, and others laboring under great bodily debility from other causes." "A disease sometimes in the form of dysentery, but much more frequently of severe diarrhœa, has prevailed in the institution to an unusual extent, and has terminated the existence of a large majority of those who have died." Dr. T. thinks this is owing to the want of regular and sufficient exercise and vicissitudes of temperature, as it occurs mainly in the extremely fatuitous and idiotic patients, and in the spring and fall seasons. Mr. Farr† says, "the mortality of 7 per cent. annually in the asylum at Gloucester, may be fairly ascribed to insanity. The excess above this must be attributed to the diseases generated by the limited space in which the unhappy lunatics are confined, to the collection of large numbers under the same roof; the impurity of the atmosphere; the want of exercise and warmth; the poor unvaried diet, and the deficiency of medical attendance."

*Transylvania Journal, 1830. †London Lancet, May, 1841.

These causes of disease require the greatest watchfulness to guard against them, both in Britain and America, and in the most improved institutions, they are resisted and overcome. How far they operate in conjunction with the causes, before stated by Dr. Theobald, in producing the extraordinary mortality of the Kentucky asylum, is only to be learned by a thorough investigation of that institution, and comparing it in its internal arrangements and administration with other asylums, in which the mortality is much less.

Elopements.—Seventy-eight eloped from the asylum at Lexington, out of 841 patients in 17 years, which is about 1 in 11. We have examined the reports of ten other American asylums, which run back variously from one to twenty-four years, and include 5325 patients, and find that of all these only 32 have eloped, which is 1 in 166. Here is an extraordinary and unaccountable difference.

The Lexington asylum has a high fence to prevent the escape of the patients. Whereas most others have no other enclosure than such as surrounds any private residence. But they have a large corps of attendants, who, by their close watchfulness, and by securing the confidence of those under their charge, retain them within their control.

These reports, which we have now reviewed, show that while most of the American asylums are doing more for the cure of insanity than any others in the world, ours is doing the least—that while others are curing from seven to nine-tenths of all that have been deranged one year and less, and from two to four-tenths of those who have been insane a longer time, our asylum has cured no more than one-tenth of old cases and four-tenths of the recent ones. It is plain then that we are not doing in Kentucky, for this unfortunate class, all that the present state of science can accomplish, and that humanity expects of us.

This deficiency is to be partially accounted for, by the character of the patients sent to the Lexington Asylum. For although insanity is primarily as curable in this as in any other State, yet as the most obstinate and incurable cases are se-

lected, out of all in the State, to be sent to the hospital, the chance of recovery must be less, and the danger of death greater than it is in other institutions.

Another cause is in the structure and administration of our asylum. This was established, when insanity was supposed to be mostly without remedy, and it was not thought needful to make provision for its cure. It was built for the protection of the public and for the security of those lunatics who were existing in strong places or strolling over the country. To maintain them comfortably and economically was all that philanthropy asked or medical science promised. Recovery was a secondary object, rather than the main principle. Public security and economy were obtained, for the dangerously mad are confined, and the expense of supporting the whole is much reduced. From 1802 to 1822 the cost to the State of maintaining pauper lunatics had increased from $892 to $15,492 per year. But by the establishment of the asylum, this fearfully rapid augmentation of expense was arrested, and the annual charge was even reduced below that of the five years, from 1819 to 1823. During these last years of the old system of supporting this class of paupers, they cost $23 per 1000 inhabitants; and during the last 12 years of the new system, from 1829 to 1840 they cost the State only $17 per 1000 inhabitants.

The establishment of this hospital was then indeed an improvement upon the old plan of supporting the lunatics, in their respective counties, under the care of committees. They gained in comfort, and some of them were restored to sanity and to their friends. But since 1824, the whole theory and practice respecting insanity has changed. It is now found to be a physical disease, and to be as curable as any other acute disorder; and asylums are now constructed and administered to correspond with the improved notions of the nature of the malady and of its treatment. But while others have been advancing and exhibiting increased success, year by year, our asylum has remained the same.

Is this state of things necessary? Cannot we do as much for the lunatic in Kentucky, as is done in other States? Most

surely we can. But first we desire, that the Legislature would appoint a committee to examine the asylum and consider the whole matter. Let them investigate the means and facilities for the treatment of the insane, and the principles and details of their management. Let them compare this with the best asylums and see wherein they differ, and why there is such a wide difference in their good results. Let them read the full and satisfactory reports of Dr. Awl and Dr. Woodward, and see how far all, that is good and useful in their hospitals, can be adopted here. We are aware that committees have gone from Frankfort to Lexington, every winter for this purpose; but their examinations have not been so thorough, nor their reports so full and minute, as we now hope to see. And we doubt not, such a procedure would discover the causes of our deficiencies, and suggest suitable remedies.

Every successful institution has an experienced physician, devoted exclusively to the insane with ample remuneration to induce him to give up every other occupation. Living in the asylum, he is able to give his whole time and energy to studying the character and symptoms of his patients; and to the cure of their disease. Without this advantage, our asylum must, as it has done, fail to reap the success of others.

We want occupation of all sorts, labor and amusement, more agricultural employment, shops for mechanics, exercise abroad by riding and walking, games, books and periodicals in the house. We know that it was thought some years since at Lexington, unsafe to put edged tools into the hands of the insane, lest their propensity to destruction might prove injurious to themselves or others.* But subsequent experience has shown, that they may be intrusted with sharp instruments, and no fears arise for their improper use of them. Hundreds have worked with chissels, hatchets, &c., in the McLean asylum, and not the slightest accident has occurred.† Patients are employed as carpenters in the hospitals of Utrecht and Sonnestein, at Hanwell, Richmond, and Wakefield in Europe, at Worcester, Charlestown, Frankford, and Co-

*Trans. Jour., III, 83. †Bell's Rep., 1839.

lumbus, in this country. "Shoe-makers, tailors and carpenters have been, for years, tried and found to work as diligently as when at liberty. I cannot see or admit any limit to the application of this principle."*

Religious exercises have been elsewhere exceedingly beneficial, and several asylums have a regular chaplain devoted to the moral and religious treatment of the insane and with singularly good effect, to compose and restore them.

A complete examination of this asylum and comparison with others, will suggest other means of reform needful to give it all the facilities for curing the insane, which modern science has developed in other places.

To do all that may be required, to employ a physician exclusively, and such a number of assistants, and of such character as to have the best influence over the patients—to provide shops, horses, carriages, library, agricultural and mechanical tools of various sorts, and all the means of occupation, light and laborious, will, at first, increase the expense to the State. But in the end it will be a saving of money, for by this additional outlay, the recent cases may be mostly cured, and a much greater proportion of the old cases than now recover. It is much cheaper to cure than to support the patients in unrelieved insanity. In the former case, a few months is all that would be needed to support them. In the latter, they must be a tax upon the public as long as they live. The 142 in the asylum at the beginning of this year, had resided there, on an average, forty-three months. While those who were cured, had lived there on an average, only eleven months. So far as this comparison goes, it proves that the curable cost the State only one-fourth as much as the incurable.

We propose, also, that the Assembly repeal the law of 1825, which permits such lunatics or idiots as are quiet and peaceable, and can be maintained at the same cost, at their homes as at the asylums, to remain in their respective coun-

*Browne, p. 96.

ties, under the charge of their committees, and draw the cost of their support from the public treasury.

And that the Legislature should withdraw all out of door allowance for the support of any lunatic away from the asylum, until he or she shall have been placed under its care, long enough to decide whether the case were curable or not. This would compel every pauper to be sent to Lexington as early as possible, after the attack of insanity, and thereby secure to the asylum a much greater proportion of recent cases and diminish the old ones. This would very much lessen the cost of maintaining lunatics. Dr. Woodward demonstrated, that the average cost of maintaining 25 recent cases, both before they entered and during their residence in the hospital, was $56 each. While that of supporting as many of the oldest cases was $1903 each.* Without doubt, similar results would be obtained from comparison of these two classes in this State.

We have seen, that the chance of recovery in every hospital is much greater for the recent than for the chronic cases. Dr. Woodward's tables show, that, 88 per cent. were cured of those insane less than one year; 57 per cent. of those insane from one to two years; 34 per cent. of those insane from two to five years; and 11 per cent. of those insane from five to ten years.* Dr. Tuke, of the York asylum, gives 79 per cent. of cases of less than three months; 44 per cent. of those from three to twelve months; 25 per cent. of those of more than one year's standing, as curable.† Dr. Burrows cures 90 per cent. of very recent cases.‡ Dr. Bell, of the M'Lean asylum, cured 100 per cent. of all that were not interfered with, in 1838.‖ This is the greatest success on record—and could not always be expected even in that excellent institution. We see then, that insanity of very short standing is one of the most curable of all acute disorders. We hardly think, that a table of as many cases of dysentery, fever or pneumonia would show as many recoveries.

There is one other reason for sending patients early to the hospital: that is the difference of time required for recovery.

*Report, 1840. †Earle. ‡Browne. ‖Report.

We have analyzed the reports of cures, in the Worcester hospital, and find the following results:

Duration of insanity before entering hospital.	No. of cases.	Average length of disease before entering hospital.	Average time required for cure.
1 month and under,	115	18 days, - - - - -	15½ weeks.
1 to 3 months, - -	145	71 days, - - - - -	17 weeks.
3 to 6 months, - -	79	22 weeks, - - - -	18 weeks.
6 to 9 months, - -	32	8 months, - - - -	23½ weeks.
9 to 12 months, -	36	11 months 3 weeks.	29 weeks.
1 to 5 years, - - -	65	35 months 2 weeks.	36 weeks.
5 years and over, -	17	122 months 3 weeks.	39 weeks.

Dr. Pritchard's analysis of the recoveries in the Gloucester asylum, gives 19 weeks as the time required to cure the cases of one month and less duration; and 33 weeks for the curing those of one to three month's standing.*

The time required for recovery increases, with the previous length of the disease, though not in exact ratio. Yet it is sufficiently manifest, that the delay of sending a lunatic to the asylum not only increases the expense of the cure, but also diminishes very rapidly the chance of the recovery.

Having now demonstrated how much is done for the cure of insanity, by the best institutions of other States, and how little is done for the same purpose in Kentucky, it is manifest, that our asylum falls very far short of the good success of theirs: and yet we offer our sincere opinion, that we may do as well as they. If we will put our asylum on as liberal and improved footing as others, if we will supply it as freely with medical and all other attendants, and means of occupation, if we will so frame our laws as to send every lunatic, in the very incipiency of the disease, to Lexington, we shall rescue many good citizens from the bondage of hopeless insanity, and save to the State a great part of the expense of maintaining them.

We now leave the whole matter in the hands of our enlightened Legislature; and while they remember, with satis-

*Pritchard, p. 103.

faction, that "Kentucky has the honor of being the first State in the Union," excepting Virginia, "to establish, at the expense and under the control of the State, an asylum for poor lunatics,"* and that long afterwards other States followed her noble example; they must also remember, that those States have made much more rapid improvements than she has, and outstripped her in this march of humanity. And as they took their first lessons of us, to establish their asylums, so we must now take our second lesson of them to raise our lunatic hospital up to the standard of the usefulness of theirs; and we earnestly beseech our philanthropic Legistors not to falter in this generous work, until insanity shall be shewn to be as curable at Lexington, as it is any where in the land. E. J.

*N. A. Review, XLIV, 112.

NOTE.—In adddition to the authorities frequently referred to, in course of this article, we are indebted, for many of the foregoing facts, to the exceedingly valuable and interesting reports of the Prison Discipline Society, whose benevolent and indefatigable secretary, Rev. Louis Dwight, has searched into every lunatic asylum as well as every prison in our land. His reports embrace a vast variety of information relative to the various means and success of treating insanity in the different hospitals, and cannot be read without deep interest and profit, by the physician and philanthropist.

Erratum.—In page 470, second line from the bottom, for 1839–40, read 1838, '39 and '40.

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LOUISVILLE, DECEMBER 1, 1841.

ALLEGED DISCHARGE OF HAIRS FROM THE HAND.

Our colleague, Prof. Yandell, has received from Dr. Parker T. Shuff, of Scott county, Ky., a letter, dated Nov. 16, 1841, from which we make the following extract:

"Miss Penelope Stout, aged 13, a sprightly girl in good health, about five weeks ago, complained to her mother that the end of her right thumb felt as her foot did when asleep, (such was her own expression;) soon after which, one of the enclosed hairs (if such they can be called) issued from it, and was soon followed by others. Indeed, they have been protruded to the number of from two to ten or twelve, in the 24 hours ever since. The first came out of the ball of the thumb, the subsequent from under the nail. They leave no perceptible aperture. Their escape after they show themselves is almost instantaneous. Some of them are eight or ten inches long. They are of different colors, black, red, and nearly white. You will see that some of the ends are crooked; which is observed to retard their exit."

Since the receipt of this letter, we have conversed with two highly respectable, non-professional gentlemen, who testified to the extraordinary account given by Dr. Shuff. They had seen the hairs issue precisely in the manner just described.

We know not what to say of this *lusus naturæ*, if, indeed, we are to regard it as a reality. Dr. Cullen, the celebrated Edinburg Professor, who was fond of referring to the ancients for explanations of rare phenomena, once on a time gave a supper, at which boiled eggs were served up. A *savant* on opening one of them found in it a large black hair. It was shown to the whole party, when the distinguished professor immediately began to quote the ancients in explanation of the curious phenomenon; in the midst of which, his son announced, that he had perforated the shell and introduced a horse hair before the egg was boiled!

We may conjecture, that the learned professor argued, that as hair had often been found in an *ovarium*, it might be developed in an *ovum*. But hairs are found in various abnormal situations. First on the skin in places where they do not naturally appear. Second, in the mucous membranes. Third, in the ovaries. Fourth, in cysts, or encysted tumors, situated in the subcutaneous cellular tissue, where they are generally embedded in a fatty matter. If a wen were to suppurate, and hairs to issue with the discharge, there would not be any thing wonderful in the phenomenon. But the case before us does not seem to be of this kind. Still, as hairs are developed in cysts, imbeded in the adipose substance, it must be admitted to be possible, that they may be produced in that substance without a cyst; and as aculeated bodies make their way from one part of the system to another, without exciting pain, and finally issue from the surface; it must be granted, that hairs may do the same. But the alleged suddenness of their exit in this case, and the absence of inflammation in the skin, present difficulties which we shall not attempt to surmount, till we are *compelled*, by additional testimony, (not meaning any disrespect to our correspondent,) to believe in the reality of what he reports. Hairs, like pins and needles, when swallowed, might make their way to the surface. Some years since, Dr. Coxe reported in his Philadelphia Medical Museum, a case, in which a head of rye made its way from the stomach of a child, through the parieties of the abdomen; and in the pathological museum of the Medical Institute of Louisville, there is a pin which issued from the surface of the body, many years after it was swallowed.

The hairs, sent us, are of two kinds, black and white, inclining (some of them at least) to amber colour. The former are without bulbs or points, and look like sections. They are coarser than the

latter, which, again, are of different lengths and diameters, and have distinct bulbs. Both kind are strong and elastic; burn with an animal odour; sink in water; and, under maceration, become more flexible. Examined with a microscope, they exhibit the usual reticulated structure.

The date of Dr. Shuff's letter is the 16th of November, five weeks, as he states, after the first hair appeared. Ten days subsequently, one of our informants saw them issuing.

Such are the statements which have reached us. If they are a fabrication, why then, gentle reader! you have lost as much time in reading as we have in writing, *et vice versa*, and so the account between us is balanced. But you may say, that if we have been hoaxed, it is no excuse for hoaxing you; to which we reply, that you need not be hoaxed unless you choose; that public journalists are always liable to be hoaxed; and that it is a less calamity to be made the subject of a joke, than to be always guarding against it. A hoax moreover is a harmless thing; in general leading to nothing more than a hearty laugh, which depurates the blood and promotes health and cheerfulness. In our next number we may perhaps give you a warrant for such a laugh.

D.

THE SHOWER OF FLESH AND BLOOD.

Our rationale of this shower, in the October number of this journal, was not satisfactory to our Lebanon friends, who declare that in adopting the rumor of the negroes' having fabricated it, we are the party "hoaxed.' The negroes it seems have not admitted their agency in concocting the shower, as we were informed they had done. Our friends, at the place where the matter was found, are confident that it must have fallen from above, and was a veritable shower. Professor Troost, of the Nashville University, visited the spot soon after the singular occurrence, and published a learned and interesting account of the circumstances in the Republican Banner. He is sure that the matter was animal, but he thinks not blood. He distinguished muscular fibres on maceration of the matter in water, which separated longitudinally, as in the case of dried beef, and were of a reddish

brown color. The pieces supposed to be blood were brown and resembled glue. One piece of flesh was found an inch and a half long, emitting a very offensive smell over the field. In all the particles found there was a distinct odor of animal matter in a state of putrefaction. Dr. Troost heated both the muscular part and that which had been called blood in a glass tube, and found them affected as beef or pork would have been in the same circumstances—there was a movement in the mass, a brown fluid rose, and a black animal charcoal remained.

The history of the strange event given to Dr. Troost was, "that on Friday, August 17, between one and two o'clock, P. M., the negroes of Mr. Chandler, near Lebanon, came in and reported that it had been raining blood in the tobacco field where they had been at work; that near noon there was a rattling noise like rain or hail, and drops of blood, as they supposed, that fell from a red cloud which was flying over. Intelligent men visited the ground, and observed drops of blood on the upper surface of the tobacco leaves, and portions of flesh and fat emitting a very offensive odor over the field." Dr. Troost cites many instances of red rain, red dust, red sand, red snow, showers of blood, so called, &c., in various centuries from 472 of our era to 1814, with the authorities, and concludes with a theory for this singular precipitate which we subjoin. After alluding to the well known power of the wind to transport solid materials through the atmosphere over a wide space, and to a great height, he observes: "Such a wind might have taken up part of an animal which was in a state of decomposition, and have brought it in contact with an electric cloud, in which it was kept in a state of partial fluidity or viscosity. In this case the cloud which was seen by the negroes, as well as the state in which the material were found is accounted for."

Supposing the facts to be as stated to Prof. Troost, this is a highly probable conjecture. The power of whirlwinds to elevate and transport solid and heavy bodies and deposite them in distant places, is a matter of familiar observation. Fish have been raised in this manner high into the air, and have fallen again in showers. The only matter about which we have had doubts was the fact of the descent of this flesh and blood from above. Y.

LOUISVILLE MEDICAL INSTITUTE.

In our last number we spoke of the prospects of a large class in the Medical Institute of Louisville as being encouraging. We are now able to state, for the satisfaction of its friends at a distance, that the expectation has been fully realized. The increase upon the number of students that were in attendance on the first of December, 1840, is more than twenty-five per cent. It will be found that the growth, this season, is fully equal to that of any former year, and that the class is one of the largest that ever assembled in any medical school west of the mountains. Y.

NEW WORK ON THE "CLIMATE OF THE UNITED STATES AND ITS ENDEMIC INFLUENCES."

Dr. Samuel Forry, of the Medical Staff of our army, whose "*Statistical Researches relative to the Ætiology of Pulmonary and Rheumatic diseases,*" were noticed in a late number of this journal, has issued proposals for a new work under the above title. It will be based on the army registers and returns, but in rearing the superstructure the author will draw materials from other sources. Judging from what we have seen of his labours, we cannot doubt that his undertaking will be ably executed; and that he will, to a great extent, supply a desideratum which all must admit to exist. The work will extend to 350 pages. Price, two dollars and fifty cents. Such of our readers as have intercourse with Louisville, may subscribe for it at the Library of the Institute and have their copies sent to this city. D.

SPINAL COUNTER STIMULATION IN CONGESTIVE FEVER.

Dr. Jno. B. Baird, of Franklin, Ky., writes us as follow: "In this neighborhood, this fall, the fevers were wont to assume a congestive type, and the bowels to be obstinately torpid—the strongest cathartics, repeated from day to day, producing no alvine evacuations. In

such cases, sinapisms over the spine, as recommended by Professor Yandell, Professor Caldwell and others, invariably produced the desired effect, if used in time, and those who were treated without them, as certainly died." D.

PROPOSED ENLARGEMENT OF THE JOURNAL.

Such of our readers as have not yet signified their desire to receive the Journal enlarged with book matter, but may intend to do so, need not carry that intention into effect; as the limited number of returns yet made, has determined our publishers to give up the enterprise.

TO CORRESPONDENTS.

Dr. Ferguson's Pathological and Clinical Reports, Dr. Carroll's paper on the Topography and Diseases of the Eastern part of Ohio, Dr. Smick's paper on those of the Wabash valley, Dr. Jones on Digitalis, and Dr. Dawson on Scarlatina, with several other communications have been unavoidably postponed.

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